A follow-up study of schizophrenic patients in four Canadian provincial locations

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A FOLLOW-UP STUDY OF SCHIZOPHRENIC PATIENTS IN FOUR CANADIAN PROVINCIAL LOCATIONS

Mental Health Division

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ABSTRACT

Following the development of neuroleptic medication, by which it became possible to control to a significant degree the symptoms of schizophrenic disorders, a variety of forms of community psychiatry and programs of de-institutionalization have been implemented across the Western World.

At the present time there is a marked lack of consensus on the best type of program for the patient group and, as a contribution to this complex debate, the current study was undertaken, utilizing the diversity of Canadian program models which provide the opportunity for a natural laboratory situation.

In locations situated in four Canadian provinces pathologically comparable groups of patient subjects were identified and interviewed at least 18 months after initial diagnosis of a schizophrenic disorder. Information was obtained on a range of demographic and socio-economic attributes, including current living conditions, on history of care, as recorded in patient chart, and on current patient status, as rated on a number of functional outcome criteria.

Inter-systemic differences were derived and patient outcomes were analyzed by known components of care received and by independent patient characteristics. Higher levels of functional outcome were associated with female gender, current or former marital status, accessibility of transporation and community facilities, and with type of residence. Treatment variables related to current maintenance in community showed stronger associations with functional outcomes than did acute care variables. These indicated on-going contact with physician and health facilities to be beneficial and the inference is drawn that physician supervision of medication is an important aspect of community maintenance. Gender differences were observed which showed male patients to be at greater risk of social and functional deterioration than female patients.

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FIGURE 1 Patient days per 1000 population in psychiatric hospitals in provinces of study location, 1955 to 1979-80. 15

CHAPTER 1 THE PROBLEM

"The publication, 25 years ago, of the discovery of a really effective pharmacological method of suppressing the major symptoms of schizophrenia must rank among the great medical advances of this century". J.K. Wing, M.D., Ph.D.[1]

The major current concern among those responsible for programs of psychiatric care is the question of how best to plan for effective and acceptable programs of community psychiatry directed towards the care and support of psychiatrically disturbed and disabled members of society, how best to plan for programs which should be at once humane and therapeutic in their effects on individuals and at the same time socially acceptable and efficient in their use of professional and material resources.

Major innovative changes in psychiatric care have been made in the last thirty years, changes which have had their most dramatic effects on treatment programs for the severely disturbed group of psychotic patients and, in particular, on the group of patients suffering from schizophrenic disorders. The care accorded the group of schizophrenic patients forms the subject of the current enquiry.

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[1]Wing, J.K., "The Social Context of Schizophrenia", A.J. Psychiatry, 135, 11. 1978.

The history of psychiatric care in recent times has been that, starting in the mid-fifties with the new availability of neuroleptic drugs with which to treat the psychotic patient, a movement began, first in the United Kingdom and later spreading to North America, to close psychiatric wards and return patients to "normal" community living. The particular impact of these changes was on care accorded to long-stay psychotic patients, who, in earlier eras, were frequently maintained in hospital back-wards for the greater part of their lives.

In Canada, the impact on the hospital model of care became apparent during the late sixties and early seventies.

This is shown in Table 1, which indicates rated bed capacity in psychiatric institutions, 1964-79.

TABLE 1

Rated bed capacity in operating institutions
Per capita decrease 1964 - 79 by province.

Bed capacity per 1,000 population.

	1964	1968	1972	1976	1978-79	Percentage decrease 1964-79
Newfoundland	1.7	3.4	1.7	1.0	0.9	47.0
P.E.I.	3.7	1.8	2.6	2.5	2.0	45.9
Nova Scotia	4.0	3.6	2.3	1.8	1.0	75.0
New Brunswick	2.7	2.6	2.6	2.2	1.5	44.4
Quebec	3.6	3.7	3.2	0.9	0.6	83.3
Ontario	3.6	3.5	2.5	2.0	1.0	72.2
Manitoba	3.8	3.2	2.6	2.3	1.1	71.0
Saskatchewan	4.0	3.2	2.2	2.2	0.7	82.5
Alberta	3.9	3.9	3.0	2.6	0.8	79.5
British Columbia	3.7	3.4	2.8	2.1	1.4	62.2
Canada	3.6	3.4	2.7	1.7	0.9	75.0

Source: Statistics Canada, Mental Health Statistics volume III, catalogue 83-205, 1960, 1965, 1970-75, 1978-79.

Over the 15 years represented by these statistics, the decrease in designated psychiatric beds, other than beds in general hospitals, has been 75%. This indicates a major innovative change in Canadian patterns - and costs - of psychiatric care.

The change has proceeded with surprisingly little attention to its effects for good or for ill. Such evaluative endeavours as have been mounted have for the most part been fragmented and localized.

In both Europe and North America, initial efforts to diminish the earlier reliance on institutional models of care met with varying degrees of success and disaster, depending on considerable local and regional variation in tradition, resources and professional expertise.

The widespread deployment of psychotropic drugs to control psychotic symptomatology made it possible for program managers to embark on a variety of forms of modified hospitalization. Investigators in turn have been interested in studying the effects of program variation on a community/hospitalization axis.

As noted earlier by the author (1982), the consequences of change have been gathered, analyzed and documented, from Manchester to San Francisco, and the results have been highly variable. Hirsch et al (1979), studying 127 British patients, randomly allocated to brief hospitalizaton and to standard care, claimed to have confirmed the value of shortening hospital stays. Herz, Endicott and Spitzer (1977) in the U.S. similarly reported that brief hospitalization is preferable to longer term hospitalization. However, they added the rider that their findings can only be generalized to programs that use the model of a comprehensive community care centre. They drew particular attention to the importance of continuity of care by the same therapist or team.

Fenton and Tessier (1979) carried out a randomized study of patients in Montreal assigned to home-care and hospital-based treatment program. They concluded that community-based care is an effective alternative for many, but not all, psychiatric patients. However, Glick and Hargreaves (1974) in the U.S., in a one year follow-up study, found "a small but statistically significant difference" favouring the long-term group. They suggest that this may have been related to greater use of out-patient post-hospital services by the long-term group.

Closure of the hospital beds has offered enticing prospects of saving money. In a Virginia study by (Jane) Murphy and Datel (1976), a net patient saving of $20,000 per annum was claimed for the implementation of closures policies. At the same time other U.S. authors described the deterioration and isolation experienced by many discharged patients. Etzioni (1976) noted that in New York City thousands of released patients "moved into shabby crime-ridden welfare hotels ... while another 5,000 ended up in nursing homes where they were often fed less, given more drugs, and abused more severely than they had been in state mental institutions," also that "public outcry ... forced New York State to slow down its de-institutionalization policy in April, 1974."

In Canada, Kedward (1975) in Toronto and Murphy (1975) in Montreal drew attention to the frequent unfortunate consequences of enforcing vigorous discharge policies and suggested that studied care be given to the application of principles and policies involving discharge of chronic patients.

Arnuff (1975) writing on the social consequences of policies on mental illness, calls for the matching of reformist policies with improved patient- and relative- based data. "Administrative indices such as length of stay ... re-admission rate ... are valueless in themselves."

An editorial note in the Lancet of May 20, 1978, points to the tendency to over-simplify and distort issues in any polarization between hospital-based and community-based policies, emphasizing the importance of making use of research findings. It is suggested that community psychiatry is not a slogan, but a complex process which needs to be understood and tested.

The conclusions to be drawn from the literature appear to be: (1) that there is marked lack of consensus about the best type of programs for chronic psychiatric patients; and (2) that the question is one of considerable complexity and subtlety, in which conclusions should only be drawn in relation to specifics of patient group and nature of local resources and programs of support and care.

The problems and questions involved assume increasing urgency as governments seek for solutions to heavy health-care costs. It is no exaggeration to say that the "community alternatives" versus institutionalization debate currently rages within governmental and professional circles, in national and international conferences and across the media throughout the Western World. Unfortunately, the urgency and intensity of the debate is matched by a striking absence of firm and comprehensive data on which to base conclusions and future policies.

It is to this large and difficult question of developing consensus on treatment programs that the present study is addressed.

The particular concern is with provincial treatment programs in Canada. Any program of health care can only be adequately understood and evaluated in the context of the total systems of health and social services in which it is set. Canada differs markedly from both the U.S. and the U.K. It shares the system of virtually universal health care which characterizes the United Kingdom, but has not suffered from many of the constraints of systemic inertia, poor socio-economic conditions, extreme fiscal restraint and highly centralized direction which have limited the effectiveness of British health services. Its health-care service is not fragmented into a two-class system as in the United States, where community mental health programs carry the combined stigmata of welfare services, ghetto services, and lower quality of staffing. Throughout most regions of the United States the community mental health programs are recognized as services for the poor. Highly skilled and highly paid therapists of any discipline are not normally to be found working in a Community Mental Health Centre, but rather in the private clinics or practices which service wealthy Americans, or middle class Americans who carry hospital insurance. In these circumstances it is invalid to assume that studies of effectiveness carried out on U.S. community programs are applicable to Canada.

Canadian studies have generally reflected the Canadian reality of strong decentralization. Under the British North America Act, in force until 1982, health, like education, lay in the provincial jurisdiction, and this basic

situation remains unchanged in the new Canadian constitution. Thus, while the federal government makes funds available to the provinces as a fiscal contribution to their health-care services (to the value of some $7.5 billion in 1981-82), the provinces have total decision-making responsibility for such matters as hospital buildings and other residential facilities, deployment of manpower resources, salaries of health professionals, and the initiation and development of community programs of all kinds. Thus, there obtains a situation in which a number of different program models exist across the country and, given the large geographical distances and differential patterns of history and migration which have characterized the Canadian provinces, striking differences in mental health programs are apparent.

The decrease in psychiatric bed use for the country has a whole has already been noted. Table 1 also presented bed use for different provinces over a 15-year time-span, and these figures give some notion of the inter-provincial differences involved.

A certain caution must be brought to inspection of these figures, which concern psychiatric hospitals, not psychiatric units in general hospitals. In some instances general hospitals have psychiatric units in annexes which are virtual mini-psychiatric-hospitals. Again, the sharp and dramatic decrease in apparent bed use in the Province of Quebec has not been accompanied by visible and well documented programs to swing resources into community programs, as in Saskatchewan and British Columbia. It seems likely that some of the fluctuation in designated bed use in Quebec and elsewhere may derive from re-naming of facilities or re-allocation of large groups of patients, such as

the mentally retarded, known in earlier years to have been designated "psychiatric patients" in several provinces. Thus these provincial data and the national data which are drawn from them, may be supposed to have a diagnostic base which is considerably less rigorous than that derived from current research-oriented information gathering activities. They do however indicate the likelihood of marked differences in pace and extent of program change between the provinces.

Given the wide divergencies of program options, professional and financial resources available in Canada, such few studies as are avail able are local, or at best, regional in nature. At the same time the very differences which make it difficult to obtain clear Canadian trends, have resulted in a natural laboratory situation. This offers the opportunity to compare divergent systems seen as total complexes of care, arising more or less naturally from local circumstances of history, tradition, socio-economic circumstance, patterns of migration and so on. For example, a major difference of structure and program orientation appears to have had an East-West axis, with western provinces on the whole historically providing more unified and evenly distributed province-wide programs, while in the central and eastern provinces, major program growth has occurred largely in association with major teaching centres and followed the prevailing orientation of these treatment centres.

Certainly, migration and history have differentially affected Canadian regions. The population of the Maritimes and Quebec, stabilized for over 200 years, has maintained on the whole traditional habits and established

procedures. Ontario, also largely a traditional province, has been deeply influenced by heavy immigration from the United Kindgom and, more recently, by new social patterns and needs created by large waves of immigration from other European countries, Asia and the Caribbean. The prairie provinces and British Columbia are in effect consolidated immigrant societies, combining a readiness to seek new solutions and lack of rigid traditional forms with the relative social cohesion and accepted lifestyles now in place which that implies. It is interesting that, on the prairies, strong community movements of economic co-operation developed in societies where significant blocks represented Germanic and Slavic religious community traditions. It seems possible that this was a major factor in the development, first of universal medicare, and later of a vigorous community psychiatry movement, in the central prairie province of Saskatchewan, for societies adopt policies and programs which are generally in harmony with existing orientation and lifestyle.

Services for the psychiatrically ill and disabled, always a field where many options offer themselves, developed in widely different ways in the different regions of Canada, offering an experimental opportunity to examine divergent service patterns in the natural setting of prevailing systems of care. This contrasts with the need to devise and artificially impose discrete experimental artifacts on complex systems in order to obtain data on divergent options of care.

Given this opportunity of natural settings, it is surprising that so little has been done in the way of comparative studies. The current investigation, carried out with federal government support, reflects federal

interest, not only in comparative costs of health care, but also in maximizing the fruits of Canadian experience to stimulate effective modes of program operation and service delivery.

CHAPTER 2 - INVESTIGATIVE AIMS

The essential design of the study was to undertake a follow-up survey of schizophrenic patients in four different Canadian locations, obtaining information on history of care, on patient living situations, and on patient functional outcomes. The schizophrenic group was chosen as a long-term patient group representing a heavy burden on health services, being a relatively clearly defined diagnostic group and being a diagnostic group reliably certain to receive formal psychiatric care.

It was hoped to investigate any interactional relationships between the group of patient outcomes on the one hand and personal life circumstance and variations in treatment and on-going care received by the patient on the other. Particular interest was expected to derive from the question whether specific components of treatment patterns as a whole contributed more strongly to variation in patient outcomes than did location in a particular system of care. It was also hoped that there would be indications of which particular program components (for example, vocational assistance against current medication level) appeared to have most impact on current functional levels. Other expected investigative directions were whether significant gender differences in living conditions, outcome or treatment patterns would appear and also whether the provincial differences in bed use indicated by national statistics would prove consistent with the history of care available for this particular patient group.

CHAPTER 3 - THE STUDY - METHODS AND MEASURES

Location Selection

Selection of the four study locations involved a number of considerations ranging from design-program considerations to highly pragmatic considerations of expedience and bare possibility. The whole enterprise was based on goodwill and collaboration, between levels of government and senior officials on the one hand, and between investigators, academics and program directors and staff on the other, with approval and agreement necessary at every level from provincial government through universities ethics committees to local staff meetings.

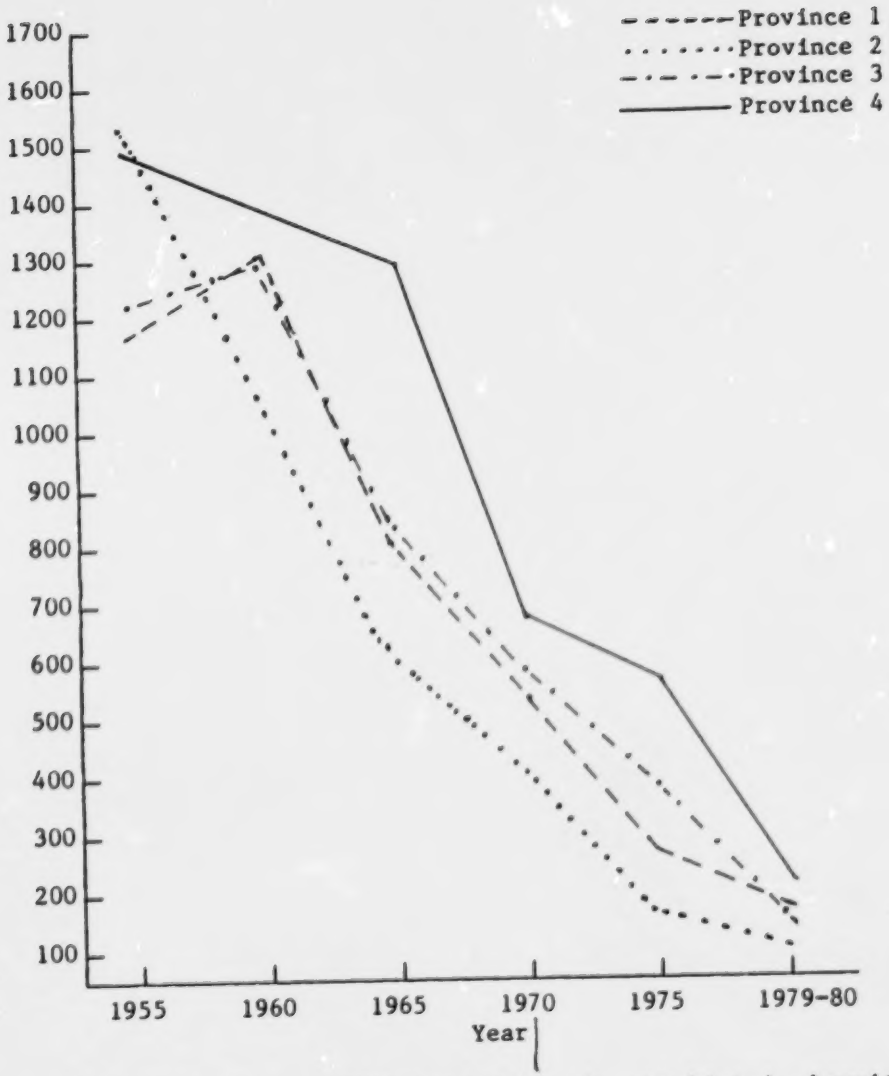
Throughout the report of data gathered and analyzed, the study locations will be identified as "System 1, System 2, System 3, System 4." This is for two reasons - to convey the concept of an overall system of treatment and care which is constitutes of the societal response to the patient's disorder, and to avoid the designation "province", as each location is not presented as typifying all systems of care throughout the province in which it is located.

An ideal design would have allowed for full comparison between two locations at opposite poles of psychiatric bed ratios, and in fact to some extent this was achieved. According to Heseltine (1982), System 2 of the study locations has the lowest ratio of bed use in the country, (40% below the national norm), and System 1 has the highest ratio (64% above the national norm). However, while there was full collaboration and access to patients in System 2, in System 4 approval at senior provincial level and at some

facilities was not complemented by approval at another (major) facility, resulting in access to a very small available patient group. Again, effective choice of location was affected by an extremely low operational budget, which for the most part limited choice to locations where fieldwork expenses were borne locally as a cost of service evaluation. In spite of such problems it was possible to maintain the concept of a broad Canadian perspective by involving two western provinces, a central province and a maritime province.

Figure 1 graphs beds in psychiatric hospitals and in general hospitals for the 25-year period preceding the study in the four provinces in which study systems were located. It makes evident the dramatic reduction in psychiatric hospital beds in Province 2 from the late 50s to the early 70s. It is also apparent that for much of this period, Province 4 maintained a relatively large number of psychiatric hospital beds, which were not reduced to levels similar to other provinces until the late 70s. To a lesser extent Province 3 also maintained a high level of psychiatric hospitalization until the 70s.

FIGURE 1



Patient Days per 1000 population in psychiatric hospitals; in Provinces of Study Location, 1955 to 1979-80*. Source Statistics Canada.

* This includes Public Mental Hospitals, Public Psychiatric Hospitals, Private Mental Hospitals, Hospitals for Alcoholics, Hospitals for Epileptics, and Homes for the Aged and Senile. Also from 1962 to 1966 patient days for Homes for Emotionally Disturbed Children are included.

Data on psychiatric beds in general hospitals show that Province 2 also took an early lead in moving toward the use of general hospital units for psychiatric care, showing 27.7 patient bed days in general hospitals per 1 000 population in 1956, compared to 17.1, 10.6, and 9.1 for Provinces 1, 3 and 4 respectively.

The Locations

Basic characteristics of the locations are described below. As noted above, it is not suggested that each system should be regarded as entirely representative of the province in which it lies, for, in spite of the broad inter-provincial differences which are apparent in terms of history, tradition and current program management, there are also intra-provincial differences, local variations which can differentially affect the experience of the service system for the individual patient. There is also variation in homogeneity between provinces. A further discussion of systemic homogeneity based on study data may be found on pages 59 to 62.

System 1. The location of System 1 is an urban area of medium size, drawing on a patient catchment population of approximately 300 000. Rural dwellers comprised 19.6% of the patient sample. With two universities (though no medical school) and a large concentration of medium to light industry, employment is well-spread across income levels and between trade, commercial and professional groups. In normal economic conditions it is a prosperous area with a fertile hinterland and access to a large metropolitan area at 2-hours' driving distance. There is no local psychiatric hospital and the general hospital has a psychiatric unit of 30 beds. Long-term patients are normally transferred to a psychiatric hospital approximately 60 miles away. A small number of patients also go by choice to a nearby private psychiatric hospital, or to facilities in a city approximately 80 miles away which possesses a medical school and health sciences centre.

Locally, there are ten psychiatrists, a Moditen clinic and a day care centre for psychiatric patients.

System 2: The location of this system is a city of 135 200 population, which possesses the major provincial university, including a medical school. Two of the three general hospitals have psychiatric units totalling 54 beds in all, and there are approximately 15 psychiatrists in the city. The mental health care facilities serve a geographically wide rural area, making for a total catchment population of approximately 240 000 patients. Of the subject sample, 27% lived in rural districts.

The system of psychiatric care is based on a strong community orientation featuring minimal psychiatric bed use, and even less use of psychiatric hospitals. Some recourse is made to the single provincial psychiatric hospital 80 miles away, but this is minimal (three cases in 1978).

A provincial free-standing mental health centre employing 24 professional staff, including three psychiatrists, is a major feature the system and there are also two community psychiatric nursing programs, a sheltered workshop and training centre. More detailed description of System 2 appears in Appendix H.

System 3: Comprises two neighbouring, medium-sized towns and their surrounding rural area for a total catchment population of approximately 200 000. Of the study population, 18.1% were resident in rural districts.

The economy is relatively healthy with cheap fuel, a prosperous farming community, urban light industry, oil and natural gas development, and a small university in one of the towns.

Each town has a general hospital with psychiatric units of 21 and 18 beds respectively and long-term patients are sent to a large psychiatric hospital approximately 250 miles away. One town had six psychiatrists, the other none resident during the study period but three psychiatrists were flown in weekly to spend a day in the mental health clinic. There is a sheltered workshop and day care program in the larger town.

System 4: Is in a metropolitan area serving a population of approximately 280 000, including the surrounding rural area. Of the study population, 4.5% were resident in rural districts. During the study period the economy was not buoyant and there were sizeable pockets of poverty in the area. There is a large university with a well-established medical school and employment is broadly based on academia, industry and commerce. There are two psychiatric hospitals of 700 and 176 beds respectively, the larger one receiving patients both locally and from all but one region of the province. In addition there are 80 beds in the psychiatric units of general hospitals. There are approximately 36 psychiatrists serving the area. There are no mental health centres or clinics independent of the hospitals, although in this province hospitals themselves are designated mental health centres and provide ambulatory services, including day care programs. Vocational

assistance programs are a particular feature of System 4 and are delivered in a hospital setting, as well as through the sheltered workshop and industrial training models found elsewhere.

Each location uses various forms of residential care, under a variety of titles - adult residential centres, group homes, approved homes, licensed boarding homes, nursing homes etc. In all locations these were in the jurisdiction of social service departments. No attempt has been made to list and describe all local definitions of residential care as this, given great variation of definition and standards, would constitute a study in itself. In tabulating patient data in succeeding chapters, all residential care has been grouped together, but there is some commentary on System 2 special accommodation in Appendix H.

Subject Selection

In four provinces across Canada, two western provinces, a central province and an eastern province, an attempt was made to contact and interview schizophrenic patients who had received service in the formal system of psychiatric care in the previous ten years but not less than 18 months before. In all but one location, where unusually severe barriers to obtaining access to patients were encountered, the attempt was made to draw all files of patients given a primary diagnosis of schizophrenia from local treatment facilities.

In order to have this access to the patients, a considerable amount of preliminary work was necessary. The protocol of the study design was submitted for approval to all necessary levels of authority and all relevant institutions, including provincial governments and ethics committees of universities and hospitals. As the design was for a retroactive follow-up study, which did not introduce any artifacts into patient treatment, there was no concern with experimental issues, but only with confidentiality issues. Confidentiality concerns were met by the assurance that all personal identifying information would be held and coded locally within the hospital or clinic from which the fieldwork was conducted, and that only case-coded data would be transmitted from the location for central analysis. As has been noted, in one location (System 4), access to patient files was not made available across all treatment facilities in the location. This was due to a strong, specific, localized concern with confidentiality.

With the assistance of a consulting psychiatrist visiting each location, subjects were then selected from file material on application of inclusion criteria developed by Spitzer and Endicott, and exclusion criteria used by Bland. Application of diagnostic criteria resulted in considerable reduction of the original numbers drawn, and further attrition resulted from application of study parameters such as patient age range (the desire being to exclude both adolescents and the elderly). Subsequently, some patients were untraceable, deceased or permission to interview refused, resulting in an overall final subject group of 182 patients. The research diagnostic criteria are listed in Appendix A.

Across the four locations the application of diagnostic criteria resulted in a consistent 45-48 percent rejection across the four locations. At first sight this appears a somewhat alarming indicator of poor Canadian diagnostic practice, but this is not the case. The application of research diagnostic criteria is directed towards refinement of the subject sample, such that a pathologically comparable group of patients will be selected in each location. This differs from the purpose of diagnosis in clinical practice, where the final goal is to treat the patient successfully. Thus, in clinical practice, mentally retarded patients, patients with evidence of organic brain damage and patients with mixed states of schizo-affective disorders may appropriately be given schizophrenic diagnoses in the interests of determining assessment, treatment and drug prescription. Such cases are eliminated in the application of research criteria.

It will be noted that the subject group in province 4 consists of only 22 patients and that a high proportion of refusals occurred in this province. The reason for these results lay in the particularly severe barriers to patient accessibility in this province, already noted as due to a strong concern with confidentiality issues. Not only was initial access to records more limited, patients were required to write and mail their consent to interview and later, at interview, required to sign a further form giving the interviewer access to their records. As a result, the subject sample in this location cannot be regarded as representing the same sweep of the total cohort with a primary diagnosis of schizophrenia which was possible in the other locations. In response to this discrepancy in subject selection, there was a concern that the System 4 group might differ in basic respects from the

subjects in other locations, and the System 4 group of subjects was tested against the subjects in other locations on a series of measures. These were: sex-age proportions, type of housing, income and sociological groupings, availability and accessibility of facilities, prosperity of neighbourhood and quality of housing. Only in one respect - numbers living in urban areas - did System 4 patients differ, with a larger number in non-rural living (although this difference did not attain significance). As this was an expected circumstance, the consequence of System 4's location in a major metropolitan area, the decision was taken to include System 4 patients as representing a group similar in descriptive parameters to the patients in the other locations.

Information Expected and Obtained from the Study

Table 2 shows the broad range of information obtained from interviews and from medical records. The data gathering instrument, known as the Interprovincial Information Schedule, is reproduced as Appendix B.

TABLE 2

Information obtained, interprovincial study of 182 patients

Personal Information	Housing and Living Conditions	Components of Treatment & Care	Functional Outcomes
Sex	Urban/rural	Referral source	Work performance or domestic competence measures
Age	Nature of housing	Professionals involved in assessment-diagnosis	Personal care measures
Marital status	Status of housing	Length of time since diagnosis	Personal independence measures
Household income	Length of residence	Mode of therapy	Physical activity measures
Family members in contact*	Status of furnishings	Primary therapist	Socialization measures
	Co-residents	Treatment setting	Presence/absence of symptoms
	Status of neighbourhood	Time in hospital	Present problems
	Crowding	Current supervision	Present satisfaction
	Television	Rehabilitation planning	Personal confidence.
	Telephone	Vocational assistance	
	Yard	Maintenance agency	
	Accessibility of stores	Professionals engaged in maintenance	
	Accessibility of recreation	Resource person named by patient	
	Transportation	Current medication levels and administration	
		Patient-expressed satisfaction	

* Criterion of being in contact with patient at least once a month

Instruments Used to Obtain Information

The major instrument was the Interprovincial Information Schedule, referred to above and reproduced as Appendix B. The Weissman Social Assessment Scale, noted below, was also applied as a verbal questionnaire.

The primary method of obtaining information was by home visit interview with the patient, supplemented by information from the patient's chart. The interviewers were field staff hired for the project, or assigned to it from provincial staffs, depending on circumstances of local financial support. An attempt was also made to track the patient's history of care from time of referral to psychiatric care to the present day. Source of the initial referral to the formal system of psychiatric care was picked up and professionals involved in initial assessment were noted. For each episode of treatment, information was obtained from the patient's file on mode of therapy, designated primary therapist, the setting of care and days spent in hospital. In the case of hospital days, counts were made for each of three last episodes and also for total history of care. Information on rehabilitation and community maintenance were also obtained, together with information on current medication.

Measures of Patient Outcome.

While such information on the Schedule as patient age, sex and housing status are relatively self-evident and simple to tabulate, some comment is required on the measures taken to obtain indices of patient outcome.

Examples of evaluative and comparative studies of modes of care abound in the literature. A variety of different indicators have been used, among them record of hospitalization, mental state of the patient as measured by various rating scales, indicators of socio-economic function such as housing and current employment.

The use of patient ability to stay out of hospital as an index of success, noted by Katz and Lyerly (1963) as a strong and persistent study criterion, and exemplified in studies by Glascote et al. (1971), Gumrucku (1968), and Stotsky (1967), among others, is perhaps the most surprising and readily rejectable. Use of psychiatric beds appears self-evidently linked to availability of beds and would appear to be largely an artifact of the system. In addition, several studies, in particular those by Cooper (1961) and by Brown (1959), have shown hospitalization to be a function of patient social circumstance rather than state of mental health. Many aspects of the patient's circumstances enter into a consideration of whether or not to discharge - home and family circumstances, economic status and resources, prospects for employment and continued support. Turner and Gartwell (1978), reviewing social factors in psychiatric outcome, note patients from lower class backgrounds are more likely to become long-stay patients, and that "at least for men, social class position and time spent in hospital are reliably associated." They also report that "marital status is also strongly and independently associated with length of hospitalization."

The measurement of social adjustment has been widely and more legitimately pursued, although with considerable variation of definition and yardstick. A common pitfall has been the setting by clinicians of standards of adjustment and mental health which are culture-biased and time-determined. Katz notes that "consensus about the meaning of adjustment is still very much beyond our grasp" and Laing (1971) has pointed out that professional monitors apply standards of normality relative to their own life-styles.

Concepts of mental health and ill health change as understanding increases and social process takes place, and it seems wise to avoid the philosophical and sociological problems inherent in any attempt to define or rate social adjustment as a state of mental health. At the very least, rating scales of mental status should only be employed in limited and careful ways.

Another approach to measurement has been by tabulation of symptomatology. Leff (1976) discussing measurement of outcomes for schizophrenics, cites Maxwell's finding (1972) that individual psychotic symptoms are not normally distributed, even within a group of psychotic patients. He observes that this renders invalid the application of parametric statistics to symptomalogically-based outcome measures for schizophrenics.

In this context it may be noted that Bland, et al. (1977), reporting results of a ten-year follow-up of Albertan patients, found that prognostic indicators failed to predict more than 25% of the variance and questioned the validity of established criteria for prognosis and prediction.

Leff also criticizes the use of the Present State Examination (P.S.E.), a standardized diagnostic instrument, for taking before-and-after measures (Wing et al., 1973). The P.S.E. examination, taking account of the whole range of symptoms, gives rise to at least three major problems when used as a research measure for schizophrenic populations: (1) individual symptoms may vary in opposite directions at different points in time, (2) the P.S.E. is at variance with the usual practice of focussing on key symptoms, (3) the schizophrenic patient may improve in typical schizophrenic symptomatology but show little improvement on the P.S.E. because the basic core of neurotic symptomatology common to all patients remains, and is picked up by the P.S.E. Assessment of the schizophrenic patient by symptomatology carries the additional hazards of relying on the accuracy of delusional patients' evidence and the difficulty of ascribing frequency-indices when some symptoms may be continuous and others discontinuous in erratic patterns.

Thus the application of various tests or instruments of the patient's mental state presents difficulties, both in the devising of culture-free tests and because of difficulties inherent to taking a scaled measure of pathological processes. However, if attention is to be paid to the relief of patient distress, it is necessary to evoke some direct patient response, which should not, however, be regarded as delivering a critical index on which to rely for assessment of treatment success.

Several tests of mental status offer themselves - leading ones being the Present State Examination, already noted, the Schizophrenic and Affective Diseases Schedule, the Personal Adjustment and Role Skills, The Katz Adjustment Scale, the Goldberg Health Questionnaire and Weissman's Social Adjustment Scale Self-Report (SAS).

While self-report scales are inexpensive and simple to administer, and carry the advantage of removing interview bias, the unreliable witness of the possibly delusional schizophrenic patient presents a problem. This is partially offset by the advantage of obtaining a measure reflective of a patient's sense of well-being from responses to the strongly affective components of the scale.

Criteria based on performance in social situations carry the advantage of lying on a normal continuum and, if reliable observations can be obtained, offer a more firmly based means of securing a measure of patients' progress or well-being. Clearly it would be important to put greatest reliance on those observations which are indisputable and self-evident. Thus, Englesman (1974) finds that the simplest and most objective criteria are the ability to leave shelter and secure paid employment. These criteria, however, as we have seen, may be affected by factors arising from circumstances other than a patient's degree of improvement.

How then are we to define the success of a system of care for schizophrenic patients? What types of outcomes have importance in relation to the appraisal of a system of care?

One approach is to go back to the point of initial contact between patient and system and ask the question "why has this patient come to care?" The answers to this question are generally resolvable to one or both of two major reasons -

1) because the patient's behaviour has deviated markedly from normal expectations of social behaviour

and

2) because the patient has been distressed.

To the extent that a system of care succeeds in normalizing a patient's behaviour in his social context, and in relieving his distress, it can fairly claim to have fulfilled the expectations of the society which supports it.

This may be a somewhat parsimonious view of systemic success, but to take patient rehabilitation further to measures of such concepts as self-actualization, freedom from psychological reaction formations, or enhanced family dynamic would be to reach into esoteric dimensions beyond society's commonly agreed expectations of health care systems. (Of course, improvement in any or all of these may well be part of an individual case history.) At the same time, indicators of symptomological improvement or results of standardized instrumentation can very usefully be employed to complement concrete situational indicators, without wholesale reliance on any single mode of measurement.

An example of one of the few rating scales to derive information on social rehabilitation or normalization, as opposed to clinical status or psychological malfunction, is Soskis' Brief Follow-up Rating (1970). This uses information on percentage of time patients function "normally" in the community (defined as working at usual occupation) comparison of premorbid with present status on job level, on independence of living arrangements, on volume of socialization and on episodes of hospitalization. The areas on which Soskis draws - ability to function at usual occupation, independence of living, volume of social contacts - are undoubtedly primary aspects of social rehabilitation. However, his procedures carry the drawbacks of poor definition of the levels of variation in lifestyles, and his data are collapsed into an arithmetical formula, a form of summation of scores, which imposes an arbitrary and rigid weighting on the importance, both of the individual areas and of variations in level of activity in these areas.

In the present study, information was drawn on a similar range of areas, but considerably more acute definition was given to ratings of independence of living, occupational function and socialization, and each of these was rated separately and independently from each other, and of any measure of time spent in hospital.

In developing the Interprovincial Information Schedule, acknowledgement is made of the many sources from which basic concepts and formulations were drawn, - the Soskis schedule referred to above, the evaluative schedules of

Strauss and Carpenter, the follow-up studies of Bland in Alberta and Sylph and Kedward's Maudsley Social Adjustment Scale, first developed in the U.K. and later adapted to Canadian conditions.

The primary aim of the Schedule was to gather objective information on actual patient behaviours which bear on the extent to which the patient was socially functional. Brockington (1978) has observed that "psychiatry lacks one of the requirements of a science, - a framework of concepts with agreed referrents understood in the same sense by all," an observation that draws attention to the dangers of assuming that mental status will be accurately reflected in selected lists of symptomatic behaviours.

Fontana and Dowds (1975) state "there is general agreement that outcome is multidimensional," citing in evidence the low intercorrelations found among different areas of functioning and lack of agreement among different criteria on the same patients. Similarly Serban (1975) on assessment of the relationship of mental status, functioning and stress to the readmission of schizophrenic patients, concludes; "outcome of schizophrenia should be viewed as a multidimensional concept, dependent on the interaction of various factors."

Some of the most extensive, significant and pertinent work on the assessment of outcome has been that of Strauss and Carpenter (1972) who point out that outcome is not a single process or phenomenon but rather is composed of several semi-independent processes best conceptualized as open-linked systems, the major ones being social relations, employment, relief of symptoms

and duration of hospitalization. They note that the schizophrenic patient is quite likely to be impaired in respect of one system and perform well in another and that various outcome functions may be differentially affected by treatment, for, although they are interrelated, each system has its own determinants and mechanisms. Leff, as we have seen, goes even further, considering even a summation of psychotic items to be misleading.

Such views are in contrast to the approach of many earlier investigators who have somewhat simplistically and blythely summated all tabulations - a procedure which has the dubious effect of treating all indicators or behaviours as if they had an identical importance and as if they were derived from mental phenomena of an identical nature. In considering this or any other outcomes study, it seems important to maintain the principle that the kinds of information to be gathered in such an enquiry are as complicated and multi-systemic as the actual human events they reflect. This is the nature of the enterprise.

Brockington concedes that operational definitions are "a step in the right direction," a view that is in accord with the present exercise of utilizing definitions of behaviour which rest as little as possible on subjective interpretation, opinion and judgement, the majority of the observations being as far as possible precisely defined, self-evident and concretely descriptive of actual behaviours.

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* By agreement with local authorities in the study locations, the sexual function components of the SAS were not used.

In summary, the major instrument of the study was a strongly function-based schedule of information, supplemented by a judgemental indicator of symptomatology and patients' expressions of well-being. In addition, the Weissman SAS* was employed primarily as a check on the concurrent validity of the Schedule and also as a supplemental measure of patients' feelings of distress/well-being.

The initial information given by the Schedule consisted of a series of scores for each item, the items being grouped into the categories "Work Competence" (6 items), "Personal Care" (4 items), "Personal Independence" (7 items), "Socializing" (4 items) and "Present sense of Well-being" (4 items). At one point in the interview the patient was asked what he/she did mornings, afternoons and evenings (two answers taken for the latter). The responses to these open-ended questions are shown in Appendix D. From these were derived indices of socialization and physical activity, as indicated in that appendix. The socialization index was used as an item in the "Socializing" aggregate score and physical activity was retained as a separate score. In addition, the individual measure of "Symptomatology" (based on work by Strauss and Carpenter), was obtained, the rating for each patient being based on a judgement reached in consultation with principal investigator and psychiatric consultant.

The raw scores for the grouped items were added without weighting to form the aggregate scores. In the case of the "Work Competence" aggregate the desire was to incorporate all patients, including those housewives who would not normally be working. Because fewer items (three) were available to score,

a "Domestic Competence" rating for these patients did not have the wide range of the outside employment rating and the scoring points were centrally placed on the scale. This seemed to reflect the reality that to do either extremely well or extremely poorly in the external work environment called for more extreme levels of competence or incompetence than are displayed in domestic responsibilities. For the housewives thus scored, the effect was to cluster them more closely to the median, flattening the effects at two extremes.

Finally, the aggregate scores, together with the "Symptoms" and "Physical Activity" score were added to form a global score. As a result of adding the wide-ranging individual items, this score was quite extended in range, the final global scores being separated at extremes by as many as 100 points. These global scores were grouped and collapsed into narrower, more manageable ranges, which had the effect of diminishing extreme variance and at the same time made for meaningful separation between points in the scales.

In addition to the outcome measures, information was gathered on patient's personal circumstances. The four sociological categories to which, as noted above, assignment was made based on living standard, education and primary family occupations, in addition to income, correspond roughly to the following family-descriptive labels:

Level 1 - Wealthy lifestyle (3)

Level 2 - Professional, college-educated family backgrounds (46)

Level 3 - Trades / artisan / small business backgrounds (105)

Level 4 - Lower working class, poverty lifestyle (28)

As Canadian society is considerably less rigid, more socially mobile and egalitarian than other societies, only four levels were chosen and these categories would be less watertight than similar sociological categories in most other countries.

Problems of a Retrospective Study

An obvious methodological drawback for any retrospective study is the non-existence of a comparable base-line index or indices of function obtained prior to treatment. For this reason consideration was given to undertaking a prospective study. However, the practical difficulties inherent in implementing a prospective study rendered such a design impractical, for a very lengthy time-span would be involved. Initial work on the study produced an estimation of initial onset for no more than ten, at maximum, suitable, compliant and non-mobile subjects per year from each location, drawing on populations of approximately 200 000. Allowing two years for treatment services to impact on patient life, the effect would have been to put the phase of follow-up assessments six to seven years in the future. An additional concern was that, as with all prospective studies, there is the possibility of an observer-bias influencing treatment (an effect which is stronger for psychiatric patients than it would be for patients with purely physiological disabilities).

Because prospective studies are lengthy and expensive, there is general agreement to restrict their use to testing in quite precise ways the findings of retrospective studies. It is expected that the current study will make an important contribution to research in the field by providing a number of indicators for future prospective testing.

In order to ensure subject group comparability, the groups of patients in each area were scrupulously defined as schizophrenic according to current consensus on the application of the diagnostic terms. This was done primarily by applying to patient chart information criteria based on the studies undertaken by Spitzer, Endicott and Bland, as discussed above. These criteria are calculated to eliminate other disabilities, such as organic brain damage, which may give rise to symptomatology similar to that resulting from schizophrenic conditions, and also to distinguish between the schizophrenic disorders and other significant diagnostic entities such as the affective or psycho-neurotic groups of disorder. The World Health Organization report (1979) on a large multinational study of syndrome profiles of schizophrenic patients has concluded that it is now possible to use such techniques of specification to classify clinical phenomena in a standard way, making for greatly enhanced compatibility between groups of patients.

Epidemiological studies, such as the World Health study, indicate that the incidence of schizophrenia is fairly constant in time and across cultures. In Dunham's words, "social class does not appear to be an etiological factor in schizophrenia; rather schizophrenia appears to be an etiological factor in social class." (Dunham, 1977)

In the current study the research criteria used to screen and refine the sample of subjects admitted to the study were designed to ensure that comparable groups of subjects were identified and compared in the different provincial locations across the country. A priori, we may assume that any gross differences found in well-being and status between the groups in the different locations were due to differences in the total complex of treatment, support services, resources and environment encountered in those locations.

Given the variegated nature of the variables involved, it was expected that the analysis would consist of several approaches - testing means by student's t-test, differential categorization by chi-square, associations between variables by Pearsonian correlations and of deriving contribution to variance by a stepwise analysis employing multiple regression analysis of selected variables.

These methods of analysis were pursued with an additional discriminant function analysis providing supplemental commentary on the homogeneity of systems.

CHAPTER 4 - RESULTS

Section 1 - Gender Differences and Living Conditions

a) Incidence

Table 4 shows numbers and row percentages of male and female patients at age groups from under twenty to over fifty. Because the desire was to select the adult, as opposed to the child-patient, a lower age level of 17 was set at initial selection, which meant, in practice, that by time of interview, few patients were under 18. Also, because the problems presented and services required by elderly populations bring new dimensions to a study of care, an upper age limit of 63 was effected.

TABLE 3

Numbers of male and female patients by age groups

Age Groups

Count Percentage	20	20-29	30-39	40-49	50+	All ages
Male	3 2.75	56 51.38	22 20.18	20 18.35	8 7.3	109 100.00
Female	4 5.48	17 23.29	21 28.77	14 19.18	17 23.3	73 100.00
Both sexes	7 5.48	73 40.11	43 23.63	34 18.68	25 13.7	182 100.00

It is of interest that 54.2% of male patients and 28.8% of female patients interviewed were below the age of 30. At older ages the situation is reversed, with 25.7% of males and 42.5% of females found over the age of 40. The gender differences in numbers between the 20s age group and the 50+ age group are significant at $p < .001$. As the study criteria set limits on number of years since diagnostic identification, this sex-age distribution reflects differential age-linked incidence patterns.

These gender differences in age-linked incidence are consistent with evidence of later age onsets for females (Hartman and Meyer, 1969, Forrest and Hay, 1973, Bland, 1977, Kramer, 1978). These are noted by Seeman (1982) in her discussion of gender-specific effects, particularly fluctuating estrogen levels, which appear to impact on age of onset in women.

The overall high male:female ratio found in this study has not been generally reported in the literature. It may derive in part from the study's cut-off screening age of 60, but with little evidence in the literature of high levels of post-50 onsets, a strong effect from this artifact is unlikely. As a further check on this effect, gender ratios were calculated in the provinces with the highest and lowest average ages. No significant differences in gender ratio were found, either between these provinces or against the total patient group. A more potent and likely factor is the effect of selection by application of research diagnostic criteria (R.D.C.). This, among other conditions, excluded states of disturbance which the

evidence indicated as being more strongly affective or neurotic-hysterical in nature than schizophrenic. Women were over-represented in this exclusion group by a ratio of 1.37 to 1.

The considerable attrition of the subject group, particularly of females, through the application of R.D.C., underlines the importance of specifying the diagnostic selection practices employed when quoting estimates of incidence or prevalence in connection with schizophrenic disorders.

Even where research diagnostic criteria were not applied, there is some evidence of gender - differential incidence rates in the literature. Kramer (1978), looking at treated incidence rates for Monroe County, N.Y., reported the age-adjusted treated incidence rate for (white) males to be 1.40 times that for (white) females, giving probabilities of developing schizophrenia of 4.8 and 3.9 for the two sexes. It should be noted that these rates were based on recorded diagnoses across the county with no attempt to refine the diagnostic group by application of research criteria. As we have seen, the current study indicates that such refinement procedures act particularly to reduce female prevalence. Thus the differential incidence may be even more marked than Kramer reports.

TABLE 4

Marital Status of Patients by Gender.

Count Row Percentage	Married and Common-Law	Ever Married	Divorced/ Separated/ Widowed	Now Single	Always Single	Totals
Males	18 16.5%	31 28.4%	13 11.9%	91 83.5%	78 71.6%	109 100%
Females	37 50.7%	51 69.9%	14 19.2%	36 49.3%	22 30.1%	73 100%
Totals	55 30.2%	82 45.1%	27 14.8%	127 69.8%	100 54.9%	182 100%

Table 4 shows marital status of patients interviewed, totalled to show sex differences for patients living in a sexual partnership, whether legally married or not, and for patients ever married or single.

It would appear that female schizophrenic patients are considerably more likely to establish sexual unions than are male schizophrenic patients, in this patient-sample by a ratio of 2.5 to 1. These data indicate that they are also more likely to be found living in a union at a given point in time, in a ratio of 1.7 to 1.

These differences are significant and are consistent with other information (below) which show that the female patient is also more likely than the male to be found living with relatives.

Such marital-status differences find support in the literature and Farina et al, (1963) have written that "schizophrenic females, even though passive and aloof, may marry with relatively greater ease than males because the role they are expected to play during courtship may be more consistent with these schizoid characteristics." Another factor, consistent with the age-gender differences in onset noted above, is that generally earlier ages of onset will also render male shizophrenic patients less likely to marry.

b) Living Conditions

Other gender differences were found with regard to accommodation, average family income and socio-economic level. These data are described and tabulated in Appendix C. The major findings, all at significant levels, were as follows.

79% of female patients lived in households where other relatives lived, by comparison with 55% of male patients.

Of the 58 females living with relatives, 37, or 64.9%, were in sexual unions. Among males living with relatives, the number in sexual unions was 18 out of 60, or 30%. This is consistent with the higher number of young males living in parental household.

Male patients appeared more likely than female patients to live in various non-family residential situations in a ratio of 38 to 6.

A higher proportion of females lived in houses and a higher proportion of males in residential care. If the 27 young people, 20 males and 7 females who still lived in their parents' homes, are subtracted, the gender difference is considerably strengthened.

Males were more often found in single-room accommodation and, in general, women patients were found to be living in a better quality of accommodation, whether this is judged by the nature of the residence or by the status of the patient's residential role (house ownership against renting).

Female patients lived in situations where household incomes were higher than those of male patients. Of particular interest is the high number, amounting to 48.6%, of male patients at the lowest income level, which in practice meant at welfare levels. Only 20.5% of female patients were at this level. As noted above, 20 males and 7 females lived in parental homes, where the household income reflected parents' earning ability. If these young people were not included, the gender differences in income would attain stronger confidence levels.

The distribution on sociological groups did not show significant gender differences. In both sexes, the numbers in the highest level group are very small, with the majority lying in level 3, the skilled trades group.

Higher household income levels were associated with family living, which is to be expected as family members raise the income level beyond the patients' personal income-generating ability. Women patients appear more likely to benefit from this situation. In addition, poorly functionning male patients appear simultaneously likely to have low personal incomes and be in some form of non-family residential care.

Discussion of Gender Differences

By and large, the patient group appeared to be well accommodated, even at very low income levels. An interesting gender difference emerges from the data, which indicate that female patients are more likely to be found living in sexual unions, in houses, with family members, in housing of better quality, and in households of higher family income. Male patients are more likely than female patients to be living alone, in various forms of residential care, and at lower income levels. These gender differences suggest that the female schizophrenic is more likely to be protected by family members, including spouse, from poverty and poor living conditions than is the male patient. In an interesting inversion of popular images of females in problem situations being found in greater need or in poorer conditions than equivalent groups of males, it would appear that the female schizophrenic patient enjoys on the whole a higher living standard than the male patient. For the adult male patient, the earning ability which supports him or the family in which he lives, is frequently his own, resulting in poorer living conditions than those of the family-supported female patient.

The gender differences were found for the whole subject group, which includes young people living in parental households (20 males and 7 females). Clearly, for these patients, the lifestyle and income level of their parents, rather than their own income-generating ability, sets the living standard of the household. Because of the larger preponderance of males in this group (27% of the male subjects against 14% of the female subjects), this masks and diminishes the gender differences observed.

An interesting aspect of the data is the lack of concordance between sex-income distribution and sex-class distribution. In the latter case, where allocation to level was based, not only on income but on family background, living standard and education, there was no significant gender difference, as there was with income levels. This may be seen as supportive of the social drift theory, by which the schizophrenic patient is seen as drifting to lower socio-economic levels in his own lifetime. The data indicate that this is more characteristic of the male patient, illustrative of another facet of the "protected" status of the female patient.

In summary, the socioeconomic and living-condition data of this study suggest that the female schizophrenic patient, having a later age of onset than the male patient, and being more likely to form a stable spousal union, appears to enjoy a protected status which confers the benefits of higher income levels, better housing and lessened likelihood of being placed in residential care.

Systemic Differences in Patient Living Conditions

Information was gathered on many features of the patient's lifestyle, including whether the environment was urban or rural, availability of yard, transportation, how many people shared the home and facilities and so on. Tables in Appendix D show the overall frequencies of such circumstances by system. From these data a simple additive housing index was derived which indicated no major overall difference in housing standards among the patients in the four systems. Inspection of the tables similarly indicate few differences. However, in view of the special interest in System 2 patients, which is discussed elsewhere, analysis was made of apparent specific differences between housing conditions for these patients in rural/urban location, "suites" against rooms without plumbing, availability of transportation and stores and crowding. Comparisons of location 2 against other locations on these measures showed a significant difference on availability of transportation only, a difference which attained no more than a .04 probability level on t-testing.

Section 2 - History of Care

Data on history of care are tabulated and noted in Appendix E. The following salient features emerged.

a) Referral

Patterns of referral differed in different locations. For example, the comparison of the systems with the highest and lowest proportions of family/self referrals (Systems 1 and 4) yield a significance for the difference of $p < .001$. If all medical facility referrals (G.P., hospital and clinic) are combined, the greatest difference in proportions also lies between the same two systems, with System 1 indicating a 19.6% medical facility referral to psychiatry and System 4 indicating an 86.4% medical referral, a difference which attains a significance of $p < .001$. Direct access to psychiatric care by patient and family was the major pathway to care overall and inversely related to proportion of medical referrals in the same location. As expected, the general practitioner is the major professional referrant in all systems.

b) Assessment/Diagnosis

In the overwhelming majority of cases, assessment-diagnostic procedures, as noted on patient charts, were conducted by psychiatrist alone, and this obtains in all systems, with system 1 showing the highest proportion of

highest proportion of multi-professional procedures - 28.2% of cases. At the opposite extreme, system 2 showed only 10.8%, but the difference did not attain significance.

When total appearances by the other professional group are added, nurses formed the majority at 16, or 9.4% of cases, followed by social workers at 13, or 7.6% of cases, and psychologists at 9 or 5.3% of cases. The low ranking by psychologists is unexpected in view of the general discipline-specific expectation of the psychologist as having a major role in assessment-diagnostic procedures. It appears that, at least for this particular diagnostic group, the psychologist is not prominent in assessment-diagnosis.

c) Modes of Therapy

Chemotherapy was the majority treatment employed in all locations, accounting for 51.2% of all recorded treatments. Chemotherapy was employed in 98.9% of cases in the most recent episode, 94.5% in last episode but one, and 94.7% in the earliest recorded episode. No inter-systemic differences are apparent by treatment episodes but this changes somewhat when data on current medication are inspected (see below, p. 58).

Some changes in practice occurred with the passage of time. The steady high percentages for chemotherapy indicate that this central therapeutic modality is not subject to the fluctuations evident in other aspects of

patient management. "Milieu"* as a therapeutic designation has clearly become less fashionable, and the use of ECT has fluctuated differentially, being reduced in Systems 3 and 4 but remaining constant in Systems 1 and 2.

d) Primary Therapist

A major part was played by members of two disciplines - psychiatrists and nurses, who together constituted 83.7% of total mentions and were remarkably close in rank order - 43.3% for psychiatrists and 40.4% for nurses. Parallel to a similar observation noted with regard to assessment/diagnosis, psychologists played a very minor part in the treatment of these patients.

System 4 showed an overwhelming reliance on psychiatrists, as against Systems 1, 2 and 3, a difference which was significant at $p < .001$. The greater deployment of nurses in Systems 1 and 3 when set against the figures for nurses in Systems 2 and 4, attained a probability level of $p<.001$. Also, the designation of general practitioners as primary therapists was only in System 3, where it appeared in 16% of designations. This latter difference undoubtedly owes something to the fact that half the population in this system is served by weekly visiting, as opposed to resident, psychiatrists.

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* Milieu Therapy, based on the concept of a therapeutic community, is often employed to designate simply a period of hospitalization.

That the medical and nursing professions are so strongly involved in this particular patient group may derive from two sources - the assumption by many psychiatrists that the diagnosis of a schizophrenic disorder is a fairly routine matter in which other-discipline help is not required and the general requirement for biological treatment measures, both during acute episodes and in periods of stability.

e) Hospitalization

The next group of treatment data refer to hospitalization during episodes of disturbance, to a limit of three last episodes. (The overwhelming majority of patients had three or fewer episodes of acute care). Table 5 shows numbers and proportions of patients hospitalized by system.

TABLE 5

Hospitalization During Episodes of Acute Care, by System

NUMBER OF PATIENTS

Count Row percentage	Psychiatric Hospitals	General Hospitals	All Hospitals	Number of Episodes
System 1	59 42.5	79 56.8	138 99.3	139 100.0
System 2	8 10.5	51 67.1	59 77.6	76 100.0
System 3	52 25.5	91 44.6	143 70.1	204 100.0
System 4	41 20.1	9 17.6	50 98.0	51 100.0
All Systems	160 34.0	230 48.9	390 83.0	470 100.0

As expected, hospitalization in psychiatric units of general hospitals greatly outstrips employment of psychiatric hospital beds in Canada. This is consistent with analysis of the national data, which shows that psychiatric hospital beds in Canada have decreased by 87% over the years 1955-79, while psychiatric beds in general hospitals increased by 81% during the same period.

The systemic differences evident in this table are the lower proportion of hospitalizations during acute care in Systems 2 and 3, by comparison with Systems 1 and 4, a difference which is significant at the level $p < .001$ ($\chi^2 = 57.6$), and the very light use of the psychiatric hospital in System 2 - 10.5% of events by comparison with 39% in all other systems. This is consistent with a 20-year pattern of psychiatric hospital attrition in the province in which System 2 is located.

The distribution of total hospital days by system, combining both psychiatric and general hospitals, shows a clear difference in average days between System 2 and the other provinces which is significant at $p < .001$. System 3 data on bed days appears to show the highest level of hospitalization but this may result from the circumstance that, in Systems 2 and 3, it was possible to obtain from central provincial hospitalization records confirmatory or supplemental information on hospital stays, thus gaining a more securely comprehensive count of total bed days than was given in individual charts, the only source of such information in Systems 1 and 4. It is thus probable that bed days in Systems 1 and 4 are markedly under-counted.

A calculation for mean length of stay on most recent acute episodes was also made. This showed System 2 to have a significantly lower average stay in recent times, 16.05 days, by comparison with 95.86 days for other systems combined. The difference is significant at a probability level of $p<.001$. There appears little doubt that patients in System 2, while they may have experienced numerous discrete periods of hospitalization, had hospital stays considerably shorter than those in any other location and that, although System 2 did not differ markedly in number of episodes of hospitalization, the smaller number of total days in hospital per patient indicates a markedly lesser use, not only of psychiatric hospitals, but of hospitalization in general. The difference in total hospital days between System 2 and other systems attains a probability level of $p < .001$.

f) Rehabilitation and Community Maintenance.

On the assumption that, with a patient group such as schizophrenics, whose illness is generally considered a chronic condition, there will be evidence of attempts to plan for rehabilitative programs, or for on-going long-term maintenance in community, files were inspected for evidence of such planning and information was obtained on post-acute-care planning on vocational assistance, and on arrangements for maintaining the patient in community.

Clearly, given the varied nature of individual treatment histories, not all such data were available. Undoubtedly there were cases where some rehabilitation planning had taken place in an informal way and no record appeared on file. Again, in many cases, there would be no clear break between acute care and rehabilitative phases of care, especially if, as in System 2, there were less hospitalization and more likelihood of patients being given ambulatory care, even during disturbed episodes. Thus, the data should be read with the qualifications that 1) not all rehabilitative work would be recorded and 2) episodes of care were not consistently defined.

Whether or not rehabilitation conferences were recorded is shown on Table 7 of Appendix E. A high number of conferences was recorded in System 3 and a low number of System 4, (each difference significant at $p < .001$). As noted above, there may of course be missing data in non-recorded conferences, but the holding of a formal, recorded conference is in itself one aspect of a system of care.

The variation in frequency of professionals named as having taken part in rehabilitation planning is of interest. As might be expected the psychiatrist was mentioned most often, for an overall total of 38.5%. Significant inter-systemic differences are: the preponderance of psychiatrist-mentions in System 2, the large input of the family doctors in System 3, and the appearance of the occupational therapist in System 4. Social workers, a profession

which might be expected to play a large role in discharge planning, ranked only 4th, being particularly few in mention in System 3, an inter-systemic difference which is significant at $p < .001$.

g) Vocational Assistance

Vocational assistance can take three major forms - assessment and/or training, job-finding assistance and the provision of special employment suited to limited abilities, as in sheltered workshops. Counts by case are shown for these components in Appendix E.

There were inter-systemic differences in vocational assistance to the patients, which ranged from a proportion of 41% of cases assisted in System 4 to 20% of cases assisted in System 1. This represents a wide inter-systemic range, the difference between the extremes achieving significance at $p < .01$.

Among the three major types of vocational assistance, special employment suited to the patient's abilities appeared relatively little in evidence in Systems 1 and 2. Special employment of course is not necessarily a permanent arrangement, but can be used as a stage towards normal employement, and is so used in System 4. In view of the great need of schizophrenic patients to achieve stability and employment appropriate to their needs, the assistance provided overall seems extremely low, with only System 4 making assistance available to the majority of patients.

h) Community Maintenance

A long-term schizophrenic illness, characterized as it generally is by episodes of relatively acute disturbance and lengthy periods of chronic disability and poor function, calls for on-going systemic measures of care and/or support to allow the patient to function in normal living. As noted in Chapter 1, it has been a major medical scientific advance to develop the neuroleptic medication which, by controlling symptoms to a greater extent than ever before, has allowed patients to live away from institutions. Which types of agencies and which disciplines were employed in the four systems to provide community maintenance are displayed in Tables 6 and 7. Records following the last three episodes of care were used in order to obtain as broad a picture as possible.

TABLE 6

Agencies Maintaining On-Going Care

Percentages of mentions for 3 episodes

LOCATION

AGENCY	1	2	3	4	Whole Group
	Percent	Percent	Percent	Percent	Percent
Out-Patient Clinic	14.4	18.1	8.8	44.9	16.0
General Practitioner	13.5	5.6	19.5	14.3	15.0
Psychiatrist's Office	36.0	47.2	12.9	16.3	25.1
	64.0	70.8	41.2	75.5	56.1
Community Mental Health Clinic or Center	28.8	13.9	56.7	12.2	37.1
Social Agency	0.0	4.2	1.0	2.0	1.4
Nursing Program	0.9	11.1	0.0	0.0	2.1
Other	6.3	0.0	1.0	10.2	3.3
All Agencies	100.0	100.0	100.0	100.0	100.0
Total Number Recorded	139	89	200	55	483

Inter-systemic differences which attained significance were the greater use of community mental health centres in System 3, and the presence of a special home-nursing program for psychiatric patients in System 2.

TABLE 7

Professionals Maintaining On-Going Care

(2 recorded, up to 3 episodes)
LOCATION

PROFESSIONAL	1	2	3	4	Whole group with totals by disciplines
	Percent	Percent	Percent	Percent	Percent
Psychiatrist	40.0	60.8	26.1	46.2	36.8
General Practitioner	14.8	6.9	31.0	37.2	24.4
Total Physicians					61.2
Psychologist	3.2	2.0	0.6	1.3	1.5
Mental Health Social Worker	12.3	3.9	5.8	9.0	7.4
Community Agency Social Worker	5.8	3.9	1.2	0.0	2.5
Total Social Workers					9.9
Mental Health Clinic Nurse	8.4	16.7	33.3	6.4	22.1
Public Health Nurse	13.5	5.9	1.4	0.0	4.7
Total Nurses					26.8
Vocational Counsellor	1.9	0.0	0.6	0.0	0.7
All Professionals	100.0	100.0	100.0	100.0	100.0
Total Number Recorded	306	89	200	55	483

Table 7 tabulates the professionals recorded as maintaining care in the community and, as in earlier component of care data, physicians appear as the predominant profession, with 61.2% of mentions, followed by nurses with 26.8% of mentions. Once again social workers rank very low with 9.9% of mentions, considerably lower than general practitioners at 24.4.

The inter-systemic differences are in the direction of relatively greater contact with psychiatrists in System 2, with nurses in System 3, with social workers in System 4, differences which all attain probability levels of $p<.001$.

Current Medication

An important treatment variable gathered was current level of patient medication. No attempt was made to gather such information retroactively as the data would, for the most part, have been impossible to assess with any assurance of validity.

Current prescribed neuroleptic drug dosages were converted to chlorpromazine (Cpz) equivalents as described by Kessler (1981), and in addition data were compiled on the use, though not the dosage, of minor tranquilizers and sedatives, megavitamins and medications for somatic ailments. Duration of current medication and method of administration were also obtained and an attempt was made to gauge patient compliance with prescription. Data on patients judged non-compliant are not included.

System 2 patients as a group were less medicated overall than patients in the other systems, the difference being significant at the $p < .001$ probability level. If the effects of numbers of patients prescribed medication and level of dosage are combined by assigning non-prescribed patients a level of "0", the difference between System 2 and other Systems becomes even stronger.

Here a systemic difference should be noted with regard to past history of medication. During episodes of acute care, information from patient charts showed slightly more patients in System 2 received medication than in other Systems. This may reflect greater variation of prescription practice in response to patient status in this System, and has relevance to the discussion (pp. 122-123) on supervision of medication.

j) Systemic Homogeneity

The occurrence of the various components of systemic care was analyzed to determine the degree of homogeneity of the systems and the degree to which various aspects of care may have been linked. In order to do this, nominal systemic variables, such as type of agency or professional maintaining contact, were grouped and coded in a continuum for biological training and input. Other variables, such as level of medication, were continuous in nature and others again dichotomous, such as the presence or absence of input by a non-psychiatric medical specialist.

Two analytic methods were used - identification from a matrix of significant Pearsonian correlations between systemic variables, and a discriminant function analysis. Results showed that, where health agencies and physicians were involved in post-treatment contact, the patients were less likely to be medicated, were not so heavily medicated and were more likely to take medication orally, and on their own responsibility (as opposed to injection by another). As in other data, a cluster effect of less functional patients being conferenced, being more often hospitalized, being seen by non-physicians and being heavily medicated seems to have been operating. Interestingly enough, assessment by a non-psychiatric medical specialist is also associated with this low-function patient cluster, indicating that many poorly functioning patients have general health problems, in addition to psychiatric disorder.

As all the subject group, by definition, were originally referred to formal psychiatric care, it would appear that either: a) there is a tendency for poorly functioning patients to be directed towards non-health maintenance; or b) patients being seen by non-physicians and non-health agencies remain heavily medicated for longer periods; or c) both effects are operating. The latter conclusion appears most likely and is consistent with other indications discussed elsewhere, particularly the comparison of patients at high and low scoring extremes, and specific attributes of System 2 (see p. 186).

Discriminant function analysis is a method of demonstrating degree of intra-group homogeneity as well as clarifying the existence or otherwise of inter-group contrasts by classifying cases according to group-typical variable values. In this case the membership "groups" were the four location systems 1 to 4, and the values represented the systemic variables categorized and coded.

If no group-specific factors had operated within the groups, cases would have appeared in a random distribution of 25% across the four systems. In fact, predicted group membership was exceptionally high, showing 100% for Systems 2 and 4, 92.9% for System 1 and 76.2% for System 3. In spite of wastage due to missing variables, significance levels were strong and the percentage of 88.24% correctly classified cases is strongly indicative of a distinct differentiation of systems.

The inference from these two analyses is that a system of care does indeed "hang together" to form a recognizable integrated entity. This entity, "the system", may resemble other systems in greater or lesser degree, but is probably unique in time and place, owing something to history and socio-cultural environment, something to legislation and financial support, something to particular personalities whose bent and enthusiasms may have marked local or regional practices. We may thus with some confidence, given the universal nature of the original selection, make comparisons between our four systems in relation to the patient data gathered. Nevertheless, although it

is a fair expectation that in-province systems will more closely resemble each other than those out-of-province, it should be noted that no firm inference of inter-provincial comparisons can be made from the results of the study.

k) Patient View of Care

Complementing the chart information, patients were asked to name the person to whom they would go if they had a major problem. The first two persons named were recorded and results are shown in Table 8. As may be seen, the majority resource person named was in-family or a friend, surely a healthy sign in patients who had undergone lengthy treatment. As the overwhelming majority named two people, the 41.9% response for this category reflects approximately 80% of cases.

TABLE 8

Professionals and Others Named as Crisis Resource By Patient

Percentage of mentions
LOCATION

Professional/Other	1. Percent	2 Percent	3 Percent	4 Percent	Whole Group Percent
Psychiatrist	23.6	15	18.9	44.0	22.5
General Practitioner	13.9	5.0	12.2	4.0	10.6
					33.1
Psychologist	1.4	0.0	0.0	0.0	0.4
Social Worker	8.3	5.0	6.6	4.0	6.6
Nurse	5.5	12.5	23.3	4.0	13.7
Family/friend	41.6	62.5	32.2	44.0	41.9
Vocational Counsellor Occupational Therapist, etc.	5.5	0.0	6.6	0.0	4.4
Total Named	100.0	100.0	100.0	100.0	100.0
Total Number Recorded	72	40	90	25	227

Consistent with the evidence on files of greater involvement by physicians, followed by nurses, the professionals named as resource in crisis appear in similar ranking. Social workers were infrequently mentioned by the patients, and psychologists scarcely at all. An interesting feature of the table, which is at odds with the overall ranking of professionals in the files, is the juxtaposition of psychiatrist and family/friend in System 2.

While psychiatrists in System 2, as noted above, appeared most prominently as professionals maintaining patients in community, they were not heavily mentioned as crisis resource by System 2 patients, who have conspicuously mentioned family/friend (62.5%). It would appear that System 2 psychiatrists did not make their patients over-dependent. These data are also of interest in relation to patient-expressed satisfaction with treatment, discussed below.

Patient view of treatment programs.

Patient observations on their experiences provide a final commentary on the systems of care.

The patients were asked 1) "How do you feel about the treatment you received from .....(hospital, clinic, private practitioner)?" and 2) "Is there anything you think should have been done differently to the way it was?"

Verbatim answers to these questions were written down and, on completion of the fieldwork, responses from the total patient group were rated on a nine-point scale for satisfaction.

Some examples of patient replies were:

Some representative verbatim responses on satisfaction with treatment.

- Pretty good - nurse more help than doctor
- Hated ward - terrified at thought of return
- Doctor X is a genius
- Psychiatrists are doing a good job
- ECT O.K. but did not like psychiatrist
- Treatment fine - preferred (vocational psychologist) to psychiatrist
- The whole psychiatric system is rubbish. Doctor did not know what she was talking about. Psychiatrists asked stupid questions.
- Everything dreadful. Did not help. E.C.T. unnecessary. Megavitamins did not help. Liked treatment in North Dakota Clinic.
- Doctor X at Y terrible, very expensive.
- Felt like a guinea pig. Drugs are better than hospital.
- Felt ward in Z hospital depressing, but they did their best. Did not like foreign student doctor. Wife had difficulty getting information from hospital.
- Felt like a prisoner in A Hospital. Prefer B Hospital, it's friendlier. Don't like psychiatrists.
- C Hospital fine - felt better.
- D Clinic fine, very pleased. Prefer social worker to psychiatrist.

There were no significant differences in average patient ratings of satisfaction by system but, in any case, inspection of the rated scores and the actual replies showed that the within-system variation was so large as to invalidate any attempt to make a between-system comparison. In fact, in the same town, one patient might be full of praise for hospital X and highly negative towards hospital Y while the next patient would show the reverse pattern, an indication that consumer ratings of psychiatric services should be treated with caution as a measure of the merit of the facility.

From the methodological viewpoint, it is worth noting the higher average score in System 4, although its elevation was not significant. Here, as noted above, because of barriers to subject participation, it is possible that the subject group was more conforming and ready to cooperate with the (perceived) medical authorities, a supposition that is consistent with the greater number of positive responses on satisfaction.

Overwhelmingly, where any comparison between professionals was made, psychiatrists were disliked or criticized. Also, if any single determinant of preference emerged, it was for "friendly" treatment as opposed to coldness and failure to give helpful information. Clearly, patient rating of treatment strongly reflected warmth of experienced relationships with caregivers. That psychiatrists would frequently be seen as cold and uninformative may owe something to the physician's role as case director and authority figure, to a

physician-patient manner derived from traditional medical role performance and/or to the fact that the immigrant caregivers (negatively perceived) were, in these locations, invariably physicians.

Section 3 - Patient Outcome Measures on Interprovincial Information Schedule

Because, as noted in the introductory chapters, the great array of tests and scales of psychological health and ill-health fail to provide information directly related to the ability of long-term patients to function independently in the community, an early decision was taken to obtain concrete functional measures on which to base a scaling of patient status at time of interview.

Thus an informational schedule, rather than a questionnaire, was constructed, which appears as Appendix B. This schedule was designed to obtain outcome measures as nearly as possible concrete, self-evident and independent of either rater or patient's judgement. As described in Chapter 2, the individual items contributed to aggregate scores on: work competence, personal care, personal independence and social relationships. These, with the addition of 'absence of symptoms' and 'physical activity' measures were also summated into a global score of overall function. Patients' scores on these measures are shown in Appendix F.

In the majority of cases the Work Competence Scores reflect patients' ability to function in the employment situation. In 19 cases, where women were housewives, and would normally expect to be housewives, a "domestic competence" score was derived from the information schedule and used as the work-competence score. On this measure the patients in System 2 attained a

higher mean score than patients in other systems, but this difference did not carry significance on statistical testing. Nor were there any associations between vocational assistance and work competence. If anything, inspection of the raw data indicated that patients selected for vocational assistance were functioning poorly overall, and if this was so it was an effective barrier to the demonstration of effective vocational assistance.

The other observation to be made on the work-competence measures is the bimodal distribution of the scores, both across individual system scores and for the whole group, suggesting that most patients either functioned at "normally" high levels as employees or they did rather badly in the workplace.

Personal-independence scores were based on measures indicative of patient's ability to function independently with regard to such "normal" activities of our society as banking, driving and decision-making about his/her life. These showed a skew towards high scoring. A higher mean score for System 2 patients did not attain significance.

Personal-care scores were derived from rudimentary functions of self-care on which only very poorly functioning patients would be expected to do badly. (See Appendix B.) Thus it is not surprising that the score distributions for individual systems and the whole group are strongly skewed to high scoring. (97.7% of scores are in the upper 3/7 of the scale.) That such measures were

included in the schedule reflects the literature on function evaluation, which is somewhat strongly oriented to poor function. In fact the patient-subjects of this study evinced levels of healthy function which were greater than had been expected. Again, although System 2 showed the highest mean score, there were no significant inter-systemic differences.

The Social-relationship aggregate scores were based on a combination of objective measurement of the "how many times?" type and some value judgement of social interaction, although the latter was kept to a minimum. As already noted in Chapter 2, a social score was also derived from the patient's list of daily activities, and this contributed to the aggregate score.

On these scores the higher scoring levels of System 2 patients attained significance on t-testing at the $p < .000$ level. Unlike the aggregate scores noted above, these social-relationship scores are normally distributed by system and for the whole group -- possibly a reflection of the broader range of behaviours on which the scoring is based.

Scores on continued presence of symptoms were necessarily based on judgement and opinion. The sequence used was derived from a measure used by Strauss and Carpenter in evaluation studies and [illegible] five categories ranging from "Continuous and Severe Symptons" to "No [illegible]." Decisions on scaling were made by the principal investigator on the basis of full description and

discussion with field staff and psychiatric consultant, taking into account all possible sources of information. That the scaling was fairly accurate is indicated by high correlations with the functional outcome measures and with the Weissman S.A.S., discussed below. (Pearsonian correlations of all outcome scores are tabulated in Appendix G.)

Results showed higher average scores with a skew to better outcomes in Systems 2 and 3, while in Systems 1 and 4 the presence of larger proportions of patients showing continued disturbance made for a bimodal distribution. The superior ratings of System 2 patients attained significance on testing at the $p < .001$ level.

The scaling of physical activity levels was derived from patient accounts of daily activities, as indicated in Appendix G. As with the social relationship scores, a broad range of raw information appears to have resulted in normal distributions throughout. The patients of System 2 appear to have been more physically active in their daily activities, a scoring superiority which attains significance at the $p<.001$ level.

In order to gain a useful index of general function, the outcome scores discussed above were added together to provide a single global outcome aggregate, shown in Appendix F.

The distributions of global scores were slightly skewed to higher scores, particularly in the case of System 2 patients. The global scores reflect the patterns observed on individual scales, with the superior scoring throughout of System 2 patients, followed by System 3 patients, becoming more pronounced. On the global index the elevation of System 2 scores attained a significance of p .001 on the Student t-test.

A final outcome score, which is not strictly speaking a functional score and therefore has not been summated into the global score, recalls the original supposition that one reason for a patient to come to psychiatric care was patient distress. While accurate measurement of the extent to which that distress was relieved is not possible, a patient's expression of current satisfaction is at least a fair measure of absence of distress. As with other aspects of the results, an a priori assumption was made that careful diagnostic selection ensured a pathologically comparable group in all locations.

The satisfaction index was based on answers to the last six questions in the "Present Sense of Well-being" section of the Schedule and frequencies of categorization are shown on Table 9.

TABLE 9

General Satisfaction with Life

System	Numbers of Patients				
Count Row Percentage	Dissatisfied (Score 0)	Moderately Satisfied (Score 2)	Very Satisfied (Score 4)	Total	Average Score
System 1	16 32.0	24 48.0	10 20.0	50 100.0	1.76
System 2	7 18.9	17 45.9	13 35.1	37 100.0	2.32
System 3	16 43.2	43 62.3	10 14.5	69 100.0	1.83
System 4	9 40.9	9 40.	4 18.2	22 100.0	1.54
All Systems	48 20.8	93 52.2	37 20.8	178 100.0	1.88

As is evident, on this measure also, the System 2 patients appeared to be doing better, followed sequentially by System 3 patients. On a t-test, System 2 scores showed a weak probability level of elevation over other Systems at $p<.026$. The similarity of the frequency distribution of subjective well-being indicators with functional outcome scores is supportive of the validity of the outcome measures. Further commentary on patient perception of well-being is given by scores on the Weissman S.A.S., discussed in the next chapter.

As is evident from the data presented above, the patients in System 2 appear to have had better outcomes than those in the other systems, followed in rank order by the patients in System 3. In the case of global score, social relationships, presence of symptoms and physical activity, the superiority of outcomes in System 2 attained a probability level of $p<.001$. These differences are discussed further in subsequent chapters.

Relationship of outcomes to independent variables

In order to determine what, if any, relationship existed between the outcome variables tabulated above and the variables of patient and systemic origin, significance testing was undertaken for the "presence of symptoms" index and for the outcome aggregate scores, with the results shown below. For dichotomous variables the student-t test was employed, for continuous variables Pearsonian correlations were calculated.

1. Patient Variables

Age of patient showed no significant relationship with outcome measures. The gender difference, noted for patients at scoring extremes (see below, p. 91) was strongly associated with outcome for the whole group, with females showing generally better outcomes than males. T-tests carried out on scores

derived from the five separate domaines and the global score showed that the superior levels of female patients were significantly higher than those of male patients.

TABLE 10

Probability levels of outcome measures associated with gender.

Outcome Measure	Mean Males	Mean Females	Probability Level
Presence of Symptoms*	1.8	1.3	.005
Work Competence	7.5	11.2	.000
Personal Care*	1.6	0.7	.002
Personal Independence	9.2	10.3	.020
Social Relationships	10.8	12.5	.013
Global Score	46.6	54.2	.000

* Scores in reverse direction.

On another outcome measure, level of physical activity, which is not, strictly speaking, a social function measure, males did better than females. The means were 9.48 and 9.40 respectively, but the difference did not attain significance.

This conclusion of a gender advantage in the direction of female patients is strongly supported by a comparison of patients at scoring extremes on global outcomes, noted below.

Supportive evidence for better outcomes among female patients comes from a series of studies in Scotland by Affleck, Burns and Forrest (1976). In an original 1963 paper, better outcomes for female patients were noted but at that time ascribed to differential pattern of domicile on discharge. (These were in line with housing data from the current study noted above - females being more likely to live in normal family homes after discharge.) However, an extension of the study and continuation of analysis of all factors and observations led the authors to state in a paper published in 1976, "we have to revise our 1963 observation; sex does seem to be associated with outcome in this particular long-term study." These authors also note a factor not included in the present study - the death rate for male patients was more than twice that for female patients (28:12). It seems possible that a longitudinal study which included mortality as an outcome indicator would yield even greater gender differentiation.

Differences for marital status are noted below (p. 93), for patients at extreme global scores. T-tests for the whole patient group showed a similar effect. Table 11 shows the significance levels yielded by comparisons between patients in a current spousal relationship and those currently single, and between those who had been in a spousal relationship at anytime against those always single.

TABLE 11

Probability levels for better outcomes associated with current or former spousal status

Outcome variables	Probability levels	
	Current Spouse	Current or Former Spouse
Presence of Symptoms	.000	.000
Work Competence	.000	.000
Personal Care	.004	.008
Personal Independence	n.s.	.047
Social Relationships	n.s.	n.s.
Global Score	.000	.000

The similarity of these sets of results appears to demonstrate that the ability to enter into a spousal relationship at all is as strongly associated with better outcomes as is present status. As noted elsewhere, spousal relationship for the schizophrenic patient appears to be less an independent variable than a component of a health complex.

The non-significant relationship with Personal Independence may derive from some aspects of the marital unions - for example only one spouse may handle banking business or drive the family car. The lack of association with Social Relationships may owe something to the fact that single people are probably more likely to go outside the home for leisure and social contacts and such activities would increase the score, for example in terms of number of friends met in a week.

Results from comparison of outcomes for income and socio-economic status appear on Table 12

TABLE 12

Probability levels for better outcomes associated with higher income and sociological levels.

	Probability levels	
Outcome variables	Income	SES
Presence of Symptoms	n.s.	n.s.
Work Competence	.01	.01
Personal Care	n.s.	.05
Personal Independence	.05	.05
Social Relationships	n.s.	.05
Global Score	n.s.	.01

Socio-economic background shows a stronger effect than current household income. This is consistent with results for patients at extreme global scores, as discussed in the last chapter.

A surprisingly strong differentiation appeared with regard to the current (but not original) location of the patients, those living in rural areas having better outcomes than those in urban areas. (For the purposes of this Canadian study an urban location was defined as a community of more than 3,000 population.) Patients in rural locations did significantly better on absence of symptoms and on social relationships, probability levels being $p < .05$. It should be noted that this location difference did not discriminate between patients scoring at global extremes (see below, p. 97).

The results for the total patient group for relatives in regular contact are shown on Table 13. These are based on information as to which, and how many, relatives were in contact with the patient at least once a month. Only the group "children" showed any significant relationship, together with relatives in total number.

TABLE 13

Probability levels for better outcomes associated with more relatives in regular contact.

Outcome variables	Probability levels	
	Total relatives	Patient's children
Presence of Symptoms	n.s.	n.s.
Work Competence	n.s.	.05
Personal Care	n.s.	n.s.
Personal Independence	n.s.	n.s.
Social Relationships	.05	n.s.
Global Score	n.s.	n.s.

Unlike the results shown below for patients at extreme scores, there is little relationship here between outcome scores and contact with relatives for the whole patient group. However the "children in contact" variable, which differentiates strongly between the patient groups at extremes, appears here in association with the important outcome measure of work competence.

Probability levels of outcome measures associated with housing variables are shown on Table 14.

TABLE 14

Probability levels of outcome measures associated with housing variables.

	Nature of Accommodation	Relatives Co-resident	Non-Relatives Co-resident	Number Sharing Living Rm.	Status Accommodation
Presence of Symptoms	n.s.	n.s.	.01	.00	.02
Work Competence	.05	n.s.	.01	.01	.05
Personal Care	.05	n.s.	.05	.01	.01
Personal Independence	n.s.	.05	.01	.01	.01
Social Relationships	n.s.	.05	n.s.	.01	.05
Global Score	n.s.	n.s.	.01	.01	.05

The direction of these associations was of better outcomes with less crowding, with living in apartments, followed by houses, and with renting or owning the home. These are expected directions, for the patients who rent or own, or are married to tenants or owners, may be expected to be doing better than those in parental homes, in lodging arrangements or residential care. As in the case of patients at extreme scores, there are no strong associations with crowding in private homes, as opposed to numbers co-resident in group homes etc.. The .05 level attained for Personal Independence and Social Relationships are in negative and positive directions respectively and probably derive from the presence of relatives giving more personal assistance, for example with clothing, in the case of the first and of relatives necessarily contributing to frequency of non-solitary activities in the second. Associations with "length of residence" and "quality of neighbourhood" were not significant.

Associations with the accessibility variables, which figure in the discussion on patients at extreme scores, are shown below for the total group.

TABLE 15

Probability levels of outcome measures positively associated with accessibility variables.

	Probability Levels			
	Stores Accessible	Recreation Accessible	Transport Accessible	Telephone in home
Presence of Symptoms	.008	.040	.006	n.s.
Work Competence	n.s.	n.s.	.008	.031
Personal Care	.009	.05	.000	n.s.
Personal Independence	.002	.000	.006	n.s.
Social Relationships	.035	.005	.005	.001
Global Score	.003	.002	.000	.020

Here, for the total patient group, as with the small, extreme-scoring patient groups, the accessibility variables appear moderately to strongly associated with outcomes.

It seems possible that a cluster of circumstances which allows patients access to out-of-home places, people and facilities has an enhancing effect on social function and general psychological health.

2. Systemic Variables

The second major part of the search for factors associated with outcome scores involved the systemic variables. These, comprising many nominal variables, lent themselves less readily to significance testing. In order to

explore the associations between these variables and patient outcomes, the nominal systemic variables were grouped and converted to continous variables, generally on a continuum reflecting biological training or hospital-to-normal residence, which allowed calculation of Pearsonian correlations. (This was not of course necessary with a dichotomous variable, such as whether or not another medical specialist was involved.)

The few significant associations found for the referral-assessment events are shown on Table 16.

TABLE 16

Probability levels of outcome measures associated with entry to treatment

	Probability Levels		
	Referral	Assessment Diagnosis	Medical Specialist
Presence of Symptoms	n.s.	n.s.	.036
Work Competence	n.s.	n.s.	n.s.
Personal Care	n.s.	n.s.	n.s.
Personal Independence	.033	n.s.	.027
Social Relationships	n.s.	n.s.	n.s.
Global Score	n.s.	.006	n.s.

The referral effect derives from the greater proportion of family/friend/self referrals in the case of high-scoring patients. That it only appears in relation to the Personal Independence measure may reflect the personal decision-making component of that measure.

The Assessment-Diagnosis effect is in the direction that nurses and social workers were more likely to have been involved in assessment procedures for lower scoring patients. As a psychiatrist by definition was always involved in diagnosis, it seems unlikely that there is a causal effect between non-medical staff involvement in assessment and poor outcomes, and more likely that the non-medical professionals were included in staff assessment when poorly functioning patients came into care, and, further, that these patients, who originally appeared more affected, did indeed show poorer outcomes.

The Medical Specialist association indicates a more frequent involvement of a specialist other than psychiatrist among lower scoring patients. This association might be expected in view of studies such as Eastwood's study of patients in general practices in London, England. These, by demonstrating co-morbidity effects, would support an expectation that less functional patients would be more likely to require assessment on non-psychological disorders or malfunctions. However, in the case of these schizophrenic patients the association is very weak.

Among acute care variables neither "mode of therapy" nor "primary therapist" was associated with outcomes for the total group. However, there were some significant differences for outcome scores among the different treatment settings and also significant correlations with time in hospital. These are shown on Table 17.

TABLE 17

Probability levels of outcome measures in association with acute care variables.

	Probability Levels	
	Setting	Time in Hospital
Presence of Symptoms	n.s.	n.s.
Work Competence	n.s.	.05
Personal Care	n.s.	n.s.
Personal Independence	.001	.01
Social Relationships	.02	n.s.
Global Score	.01	.01

The association with setting is in the direction of patients treated in general hospitals and ambulatory care doing better than patients treated in psychiatric hospitals, an effect which is not apparent for patients at extreme scores (see below). Similarly, a total hospital-days effect, which was not observed for patients at extremes, is evident for work competence, personal independence and global score. Again it is the expected direction, higher scores correlating with fewer days spent in hospital. It is possible that these effects only attain significance when the larger number of cases is analyzed.

The final group of systemic variables, those relating to rehabilitation planning and maintenance in the community showed the effects listed on Table 18. Only information on most recent episode was used, and so these data reflect recent and current events.

TABLE 18

Probability levels for associations between outcome measures and rehabilitation variables on Pearsonian correlations

	Conference Held	Vocational Assistance	Contact Agency	Contact Professional
Presence of Symptoms	n.s.	.013	.044	.001
Work Competence	.002	.024	n.s.	.000
Personal Care	n.s.	.038	.000	.000
Personal Independence	n.s.	.009	.003	.002
Social Relationships	n.s.	n.s.	.043	.001
Global Score	n.s.	n.s.	.009	.015

Interestingly, the "rehabilitation" variables, which relate to patient's continued maintenance in community, particularly at the time of the study, show stronger associations with outcome than do the acute care variables. The contact agency and professional data are strongly in the direction of patients in contact with medical facilities and physicians doing better than those in contact with non-medical facilities and professionals. The Rehabilitation Conference associated with work competence and the Vocational Assistance associations are in the direction noted above, that patients showing poorer

function or status appear to be accorded special attention from non-medical staff and to be offered vocational assistance. No significant associations were found for professionals participating in conferences.

Associations between prescription practices and patient outcomes were not strong. Only between level of weekly dosage on the one hand, and 'presence of symptoms' and global score on the other, did Pearsonian correlations show significance, but these were not strong (probabilities of $p < .036$ and $p < .028$ respectively). As might be expected, these associations were in the direction of higher dosage with poorer patient outcome.

A striking fact to emerge from these analyses is the greater strength of association with outcome scores found for variables concerned with current contact, by comparison with associations found for variables concerned with history of acute care, (primary therapist, mode of treatment etc.).

As a final comment on the association of outcomes and treatment, correlations between outcomes and satisfaction expressed by patients with treatment were calculated, but no significant associations were found. As noted above (p. 66) internal evidence indicated that consumer ratings were a poor measure of psychiatric care.

Commentary on the concordance of outcome measures and the Weissman SAS appears in the next section.

Section 4 - Weissman Social Assessment Scale

One of the most functional of self-report questionnaires, the Weissman Social Assessment Scale, was also employed. The major aim of applying the Weissman questionnaire was to provide a validating measure against which the outcome-linked items of the schedule could be tested, and also to supplement the information derived from the schedule.

The results of calculating Pearsonian correlations between the global scores of the Weissman SAS scale and the outcome measures of the Interprovincial Information Schedule are shown in Appendix H. The Weissman scale comprises five major modules - work, social and leisure activities, extended family, marital, parental, and in addition, derives an overall adjustment index. As noted above, by agreement with provincial sponsors of the investigation, questions relating to physical sex content were not asked, so no quotation has been made on the 'marital' module, in which questions on sexual function figure quite largely.

The Weissman scores showed generally high correlations with the study schedule, a demonstration that the schedule obtains information consistent with a validated clinical instrument. The less significant correlations related to the Weissman parental global scores, and this is probably due to the small number of patients to whom the parental section of the Weissman schedule could be applied.

The highest correlations were produced for the Absence of Symptoms ratings, a confirmation by this clinical instrument of the validity of the study ratings on continued presence of symptoms. The lowest correlations were with physical activity levels, which have no parallel in the Weissman schedule.

It is noteworthy that stronger correlations were found between the Weissman SAS and the more clinically oriented and emotion-laden indices of the study schedule, such as social relationships, expression of distress, degree of independence and continuation of presenting symptoms.

Less correspondence appeared between the employment competence aggregate score on the study schedule and the global and individual employment indices of the Weissman. This discrepancy probably arises from the very different nature of the items in the employment sections of each schedule. In the Weissman SAS, four of six items feeding into the employment scores refer to the respondent's judgement on his adjustment at work (relationships and satisfaction). Thus it may be expected that the Weissman score will more closely reflect the personal-relationship, general feelings of well-being of the patient, picked up on such scores of the Interprovincial Schedule as "socializing relationship," "symptom severity" and "expression of problems."

Employment of the SAS was also expected to provide a supplemental measure of patients' feelings of distress/well-being, and Appendix I shows Weissman scores by system for "Work," "Social and Leisure" and "Overall Social Adjustment." Scores for "Family and Parental" items are not displayed, as very few patients were rated on these items.

The SAS scores follow the same general patterns as scoring on the study schedule items. System 2 shows general superiority, followed by System 3, with the exception of the "Work" items, where System 4 is in second place. On "Social and Leisure" and on "Overall Adjustment" System 2 scores show significantly higher levels than other systems on the Student t-test ($p<.002$ and $p<.000$ respectively).

Section 5 - Comparison Of Patients At Extremes Of Scores

Some of the most interesting findings of the study come from comparisons of patients at the highest and lowest scoring ranges on global outcome scores. It was hoped that, by identifying patients at scoring extremes, it would be possible to focus more sharply on those patient-characteristics which were associated with better or poorer outcomes.

Global outcome aggregate scores were calculated as embodying the measures of Work Competence, Social Relationships, Personal Independence, Personal Care, Absence of Symptoms and Physical Activity defined above. A cut-off point on the global score continuum was established, such that approximately 16% of patients fell below and above these scores (16% being chosen as representing one standard deviation from the mean on the normal distribution curve). This resulted in the identification of 31 patients at low score levels and 29 at high levels. (Clearly an exact balance was not possible because a group at one particular score could not be split.)

Location in System of Care

Taking first comparisons of the patients at extremes by nominal variables, the most striking result is probably the differential performance of patients in the four systems. This is shown in Table 19.

TABLE 19

Patients at Extreme Global Scores, by System

System	High Scoring Patients		Low Scoring Patients	
	Number	Percentage of System	Number	Percentage of System
System 1	6	11.76	10	19.6
System 2	13	35.13	4	10.81
System 3	10	13.89	12	16.67
System 4	0	0	5	22.73
Total observations	29	100.0	31	100.0

The difference between proportions of patients at high and low scores across the four systems is striking and attains a probability level of $p<.001$.

Clearly, System 2 was most successful at producing high-scoring patients, followed by Systems 3 and 1 in that order. This is consistent with the generally higher results for System 2 on the outcome measures, noted above.

Marital Status

Patients at the two extremes were also differentiated by marital status, as shown on Table 20.

TABLE 20

Patients at Extreme Global Scores by Marital Status

Marital Status	High Scoring Patients		Low Scoring Patients	
	Number	Percentage of System	Number	Percentage of System
Married/Common Law	14	25.5	4	7.3
Divorced/Separated	5	18.5	4	14.8
Always Single	10	10.0	23	23.0
Total observations	29	100.0	31	100.0

What is evident here is that spousal unions are associated with better outcomes, with a clear continuity from current spousal status, through past spousal status, to always-single status.

Various combinations of marital status are possible. All show that patients in current spousal relationships are over-represented among high scoring patients. Counting divorced/separated patients as a separate group or combined with single against combined married and common-Law, yield probabilities of $p < .01$ on chi-square.

It seems probable that, while patients in a spousal relationship gain supportive assistance which may result in better outcomes, the establishment and maintenance of a spousal relationship reflects healthy resources in the

patient. As with many variables in the study, spousal relationship may be reliably viewed as a component in a "complex of health" for schizophrenic patients.

Housing

A comparison by type of housing showed no significant differences for proportions of high- and low-scoring patients. Although there were more high scorers in apartments, as opposed to houses, the only comparison which yielded significance was of group homes and long-term hospitals against all other accommodations, for no high-scoring patients were in group homes or residential care. (For example, equal numbers of patients at extremes were in single-room accommodation.)

In contrast, status of housing provided significant differences between patients at the two extremes, as shown in Table 21.

TABLE 21

Patients at Extreme Global Scores by Housing Status

Status of Housing	High Scoring Patients		Low Scoring Patients	
	Number	Percentage	Number	Percentage
Rented	18	26.1	10	14.5
Owned	8	17.4	4	8.7
Non-Family Lodging	1	12.5	1	12.5
Family Lodging	2	4.7	10	23.3
Residential Care	0	0.0	6	37.5
Total observations	29	100.0	31	100.0

The continuum of high to low scoring is interesting, running as it does from renters through owners to family lodging and residential care. The superior scoring of renters seems congruent with the very slight effect for income levels noted above. The differences in numbers of patients in these different housing situations are significant at $p<.001$.

The high family lodging percentage of 23.3% for low-scoring patients suggests that, as noted with respect to female patients, the family often plays a protective role for the poorly functioning patient. A summary table,

Table 22, displays for the patients at extreme scores the significant associations, or lack of them, between patient outcomes and those variables descriptive of patient circumstances which lent themselves to significance testing by Student t-test.

TABLE 22

Significances on t-Tests of Differences Between Patients' Circumstances at Extreme Global Scores

Variable and Direction	No Significance	Probability Level
Gender - females did better		.001
Age	X	
Income	X	
Location - Urban/rural	X	
Relatives in contact	X	
Patients' children in contact - high scorers had more child contact		.017
Length of present residence	X	
Relatives co-resident	X	
Quality of furnishings	X	
T.V.	X	
Telephone - high scorers had more telephones		.029
Relatives sharing bathroom	X	
Relatives sharing kitchen	X	
Non-relatives sharing kitchen - low scorers shared with more people		.018
Share living room - low scorers shared with more people		.001
Neighbourhood prosperity	X	
Stores accessible - greater access for high scorers		.003
Recreation accessible - greater access for high scorers		.000
Transport availability - more available for high scorers		.001
Yard available	X	
Year of first contact	X	
Sociological index - high scorers in higher SES group		.006

As may be seen, the gender effect was strong, showing a probability level of $p<.001$ for females being over-represented among high-scoring patients. Other significant effects were: for number of patient's children in regular contact, for having a telephone, for nonrelatives sharing kitchen and living room, and for the group of accessibility indicators - transportation, stores and recreational facilities. High scoring patients also appear to have had higher sociological backgrounds.

The association with number of children in regular contact is in contrast to the lack of any significant association with total number of relatives in regular contact. It seems more likely that having children and retaining regular contact with them is a function of patient health, than that patient health is significantly enhanced by the contact, but both effects are probably operating. Certainly, it appears that contact with children, rather than with other relatives is one component of a total "complex of health" for this group of patients.

The association with sociological index, though not with present household income, is of interest as this probably represents the effect of a variable more "independent" than most. It will be recalled that this index was derived from a total background which included assessment of education,

parental occupation and family lifestyle. It would appear to be a variable worth pursuing with more closely specified instrumentation than was used in this study.

The appearance of the accessibility variables is of great interest. Taken in conjunction with the surprising appearance of the telephone, they suggest that patients with more opportunity for being outgoing and in touch with the outside world do better than those who lack such opportunities. The accessibility group of variables show more discriminating strength than the strictly housing-quality variables. These appear to show strength in relation to crowding, but as the significance levels are only found where co-resident relatives and non-relatives are present (and not, for example, with "relatives sharing bathroom"), they reflect living in group homes and various forms of residential care, rather than crowding in a normal private household. Living in various forms of arranged or residential care is of course in large measure an outcome indicator in itself, another component of a "complex of health" for schizophrenic patients.

As noted above, the lack of difference between the two groups with respect to hospital days is interesting and, in conjunction with the lack of differentiation by medication, it is encouraging, for it indicates that patients who have had, and continue to have, a good deal of traditional

treatment can have very favourable outcomes. It is now also encouraging to note that neither age nor year of first contact showed significant effects, implying that older patients can do as well as younger ones.

The only hospital-day effect was in relation to short stays two episodes back. This may suggest that case management in earlier years discriminated more strongly for degree of disturbance, keeping more highly functional patients in hospital for short stays relative to poorly functional patients than is the case today. More importantly for the methodology of evaluation studies, the lack of differentiation on hospital beds lends support to the view, stated above in the chapter on outcome measures, that number of bed-days should not be taken as a measure of patient outcome, but should rather be treated as a systemic variable.

Components of Care

Turning to systemic variables, no significant differences in numbers of patients at extreme scores appeared for: referring agent, where the numbers in each patient group were very even; for professionals involved in assessment/diagnosis; for mode of therapy; or for treatment setting. Only the therapist in the most recent episode of acute care differentiated the patient groups, at a significance of $p < .01$. This difference, which is in the

direction of social workers and nurses showing higher proportions for low-scoring patients, and physicians for high-scoring patients, is shown in Table 23.

TABLE 23

Patients at Extreme Global Scores by Therapist Last Episode

PROFESSIONALS	High Scoring Patients		Low Scoring Patients	
	Number	Percentage	Number	Percentage
Psychiatrist	18	22.8	13	16.5
Social Worker	1	8.3	4	33.3
Nurse	6	8.0	14	18.7
General Practitioner	4	44.4	0	0.0
Total Observations	29	100.0	31	100.0

The table seems to indicate that physicians, even general practitioners, appear to be more successful as primary therapists than their non-medical colleagues. It seems possible that the high proportion of low-scoring patients in the caseloads of social workers and nurses owes something to a selection of very low functioning patients for "supportive" care from non-physicians, but this does not entirely explain the differential proportions among high-scoring patients. Also, as noted above, professional distribution among primary therapists varies markedly with system.

A further explanation may lie in a general requirement for the administration of chemotherapy in the treatment of this patient group. (As noted above, it was employed as a therapy mode in almost all cases.) It may be that physicians, who alone are equipped to assess and prescribe medication requirements, will have greatest success in treating a disorder where medication is central to patient care.

In view of the extent and ardour of debate about different types of hospital and the respective merits of hospitalization versus ambulatory care, it is worth noting that there was a lack of any significant effects for either treatment-setting or days hospitalized.

Few significant differences are yielded by a comparison of the two patient groups on rehabilitation variables. No differences were shown for professionals involved in planning rehabilitation, holding of a formal conference or type of discharge residence.

Vocational counselling data showed a difference between various combinations of vocational assistance at a significance level of $p<.03$. However, the major feature of the difference was that 82.8% of the high-scoring patients received no form of vocational assistance at all, by comparison with 38.7% of low-scorers. This suggests that, when vocational assistance is offered, it is to those (less functional) patients who appear to be in greatest need of it.

There is marked separation of the two patient groups with respect to agency maintaining contact in the community, and the difference shows significances of $p<.02$ for most recent and last-but-one recorded episode. The numbers involved, summated for contact following last two episodes, are shown on Table 30.

TABLE 24

Patients at Extreme Global Scores by Maintenance Agency, Last Two Episodes

Maintenance Agency	High Scoring Patients		Low Scoring Patients	
	numbers	%	numbers	%
Out Patient Clinic	9	18.0	11	19.0
Community Clinic	11	22.0	31	53.4
Psychiatrist's Office	15	30.0	5	8.6
General Practitioner's Office	10	20.0	3	5.2
Nursing Program	0	0.0	2	3.4
Other	0	0.0	3	5.2
None	5	10.0	3	5.2
Total Observations	50	100.0	58	100.0
No Data	8		4	
Total Cases	58		62	

As the table makes evident, patients with good outcomes were more often seen in physicians' offices, as opposed to clinics, etc., a finding which is consistent with the data on primary therapists.

It is also consistent with the data on professionals maintaining contact with the patient. These, for current contact and for last but one episode, are shcwn summated in Table 25.

It should be noted that up to two contact professionals per patient per episode could be recorded, so the figures reflect comparative activity or intervention among the professional groups and are not a count by patient.

TABLE 25

Patients at Extreme Global Scores by Professionals* Maintaining Contact Following Last Two Episodes

Maintenance Professionals	High Scoring Patients		Low Scoring Patients	
	numbers	%	numbers	%
Psychiatrist	32	39.5	30	30.0
General Practitioner	15	18.5	18	18.0
Psychologist	1	1.2	1	1.0
Social Worker	1	1.2	11	11.0
Nurse	11	13.6	33	33.0
Vocational Counsellor	1	1.2	0	0.0
None, No other	20	24.7	7	7.0
Total Observations	81	100.0	100	100.0
No Data	27		15	
Total Cases	29		31	

* Two mentions possible each episode.

The main feature of the table is the over-representation of contacts with the two majority, non-medical professionals, social workers and nurses, among the poorly functional patients. A chi-square was calculated to compare the numbers of all physicians in contact against combined numbers of nurses and social workers in contact, which yielded a probability of $p<.001$, confirming a higher proportion of non-medical professional contacts during maintenance periods for the poorest functioning patient group.

As suggested above, what we may be seeing here is a tendency for the most disturbed and disfunctional patients to drift away from the more traditional medical services to social and other services staffed in part or in whole by non-physicians. That these patients presumably continue to require supervision and adjustment of medication level, and are less likely to get this than patients in regular contact with physicians, would operate to widen even further the functional gap between them and patients showing superior function. The data indicate that this happened less in System 2 than in the other locations, which would be congruent with the degree of control and supervision exercised in that system. (Appendix H)

It is interesting to compare these recorded data with answers given by patients themselves to the question "To whom would you go for help if you had a problem?" (This question was preceded by the questions "Do you have a major problem just now? "How do you handle it?" etc.)

There was a large representation of nurses and social workers in the answers of low-scoring patients but it did not attain significance. The effect which did attain significance (at $p<.001$) was the greater response of "family or friend" (as opposed to any professional) among the high-scoring patients. Clearly this is a healthy response and may be regarded as another component or indicator in a "complex of health" for schizophrenic patients.

A final group of systemic variables relate to current medication. Major tranquilizers were prescribed for 93.3% of low-scoring patients and 65.5% of high-scoring patients, a difference which is significant at the $p<.01$ level. Differences between the groups on compliance, method of administration, person administering and non-neuroleptic medication were not significant. More than one major tranquilizer was prescribed for 6% of the low-scoring patients, no more than one for any high-scoring patient but there was no difference on either duration or level of current medication. The only effect was a weak association shown by t-testing of $p<.049$ between level of current medication and physical activity, more active patients being less heavily medicated.

Section 6 - Multiple Regression Analysis of Variance

In an attempt to derive summary statements on variables contributing most strongly to differential patient outcomes, stepwise regression analysis was employed, taking each aggregate outcome score as a dependent variable. The independent variables of the analysis were selected from those systemic and living-condition variables which appeared to offer most predictive potential from frequency cross-tabulations and Pearsonian correlation matrices. It should be noted that "System of Care", being a nominal variable, was not included in the regression analysis.

Three separate types of analyses were undertaken on aggregated outcome scores, the first putting into the analysis those variables which were descriptive of patient circumstances (marital status, type of accommodation etc.), the second putting in systemic variables (referring agent, medication, days in hospital etc.), and the third utilizing both types of variables.

For aggregated scores of Personal Care and Personal Independence no significant effects were found. Results of the regressions on Global Score, Work Competence, Social Relationship and Weissman SAS are tabulated below.

TABLE 26

Multiple Regression on Global Aggregate Scores (Summary Table)

Variable	Significance Level	Percentage of Variance Accounted For	Type of Variables
Status of home (owned etc.)	0.000	13.66	Patient Circum-stances
Transport available	0.000	6.53	
Marital Status	0.027	2.23	
Current contact agency	0.031	6.83	Components of Care
Status of home (owned etc.)	0.002	13.66	All Variables
Transport available	0.024	6.53	

It would appear from this table that variables descriptive of treatment have less impact on outcome than those descriptive of patients' personal situation. However, the specific variables of home ownership or renting (by patient or spouse), transportation available (which may include car ownership) and current marital status are likely themselves to be affected by the patients' functional level and psychological health.

Not selected by the analysis were income level, sociological level or relatives in contact. Gender was not put into the above analysis in order to allow other effects to emerge, but when gender was used it was shown to account for 9.26% of the variance.

The importance of status of accommodation, transportation and marital status has been noted elsewhere in the report. The single component of care selected in the second analysis is noteworthy. This is in the direction of current contact with a health facility being associated with favourable outcome and is consistent with similar findings reported on other pages.

The results of regressions on the Work Aggregate Score are shown in Table 27.

TABLE 27

Multiple Regression on Work Aggregate Scores

Variable	Significance Level	Percentage of Variance Accounted For	Type of Variables
Marital Status	0.000	21.90	Patient Circum-stances
Status of accommodation (owned etc.)	0.013	2.69	
Income	0.036	1.89	
Current contact agency	0.026	7.33	Components of care
Marital Status	0.000	21.90	All Variables
Current Contact Agency	0.040	4.94	

This table shows a similar pattern to that of the regression on global scores, with the major difference that marital status accounts for 21.9% of the variance in the first analysis. This is in the direction of patients in a current spousal union having more favourable outcomes, the continuum running through once-married to always-single.

Results of regressions on the Social Relationship aggregate score are shown in Table 28.

TABLE 28

Multiple Regression on Social Relationship Aggregate

Variable	Significance Level	Percentage of Variance Accounted For	Type of Variables
Telephone in home	0.000	8.02	Patient Circum-stances
Transportation available	0.025	2.70	
None significant			Components of Care
None significant			All Variables

The only two variables selected, telephone in home and transportation, although acounting for only small percentages of the variance, are nevertheless of interest as being congruent with results already noted indicating the importance of the group of "accessibility variables." It appears that accessibility variables have greater impact on patients' social interactions than on other aspects of patient status.

Results of regressions on the only other aggregate score to show significant associations, the Weissman overall score, are shown in Table 29.

TABLE 29

Multiple Regression on Weissman Overall Score

Variable	Significance Level	Percentage of Variance Accounted For	Type of Variables
Marital Status	0.000	12.30	Patient Circum-stances
Transportation available	0.001	5.23	
Status of accommodation, (owned etc.)	0.005	3.51	
Total relatives in contact	0.014	2.86	
Professionals planning rehabilitation	0.048	5.81	Components of Care
Marital Status	0.003	12.30	All Variables
Transportation available	0.046	5.23	
Professionals planning rehabilitation	0.025	6.27	

It will be recalled that the Weissman scale is particularly useful as an indicator of patients' sense of well-being. Here the marital status variable is once again noteworthy, accounting for 12.3% of the variance. For the first time the variable "number of relatives in regular contact" (defined as a minimum monthly contact) appears, although accounting for only 2.86% of the

variance. The effect of the "professionals planning rehabilitation" variable is in the direction of better outcomes where planning is undertaken primarily by the psychiatrist. This is consistent with indications reported elsewhere that patients with better outcomes, for whatever reason, appear to lie more wholly in the care of physicians and health facilities.

In order to rank-order the variables by strength of association with patient outcomes, the percentage of variance accounted for by each variable showing a significant association in the "all variables" analyses were added to give a ranking score. The marital status variable appeared strongest, with a ranking score of 34.2, followed by "status of accommodation" at 13.66, "transportation available" at 11.76, "professionals planning rehabilitation" at 6.27 and "current contact agency" at 4.94. It should be noted that gender was omitted from the analyses as confounding the effects of several other variables, notably marital status, family income and type of accommodation.

CHAPTER 5 - DISCUSSION

General Considerations

Leighton (1982), in common with other commentators on social psychiatry, has emphasized heterogeneity of mental illness and the multiplicity of casual factors involved. As indicated in Chapter 3, in such a complex interaction of wide-ranging variables descriptive of human behaviours and conditions, and of equally wide systemic variation (itself compounded by many human factors), the expectation of deriving a neat statistical summation (much less a formula) of factor potency is unrealistic. Given the difficulties involved in undertaking an evaluation of the relative effectiveness of systems of treatment and care, the approach was to consider such a multi-faceted complex from many different perspectives, rather as, confronted by a new life form, one might cautiously approach the task of definitions by considering the form from many, and heterogenous, points of view.

Thus the approach to analysis has been cautious and painstaking, examining data from the patient subject group from several perspectives - that of gender, of marital status and of various domestic and socio-economic points of difference. One line of enquiry was a comparison of the patient groups falling into opposite tails of an aggregated scoring distribution and another, given evidence that the four systems of care, set in their particular locations, could be regarded as distinctly varied one from another, was to inspect results for systems as a whole. The conclusions to be drawn from

these various approaches are such as may be congruent with indications coming from several directions and such as are explicable in light of several emerging deductions.

Some emergent deductions are marshalled under the following headings:

1. Gender differences

Gender differences were a striking feature of the study data. These suggest that the female schizophrenic patient is more likely than the male patient:

a) to have later age of onset

b) to be more often misdiagnosed

c) to have better functional outcomes

d) to be more likely to form spousal unions

e) to be more likely to reside with family members

f) to live in households of higher incomes

g) to be less likely to be in residential care

It seems likely that there are causal linkages between these circumstances, particularly between age of onset and marital status. The circumstances of residence with family members (including spouses and children) confers a relatively protected status on the female patient, in

which she enjoys a higher living standard and better housing. Clearly this also affects residence in care, the last circumstance listed.

As absolute numerical indices these gender differences were observed across all locations although, with small cell numbers, mean differences did not in every case attain the significance levels quoted for the total subject group of 182.

2. Marital status differences

Patients who marry and remain married have better outcomes, particularly in work situations. Patients who see their own children regularly also do will, and this is obviously associated with marital status.

3. Housing and socioeconomic differences

There was an expected association of better outcomes with patient or patient's spouse being an owner or renter and poorest outcomes with residence in some form of care. Surprisingly, renters living in apartments seemed marginally healthier than owners of houses (while both groups did considerably better than people in lodging arrangements). The reason for this is not clear, but the effect is congruent with the nil-effect for income level on all outcomes except employment and independence. (However, higher levels of

sociological (family) background seemed to affect outcomes other than symptomatology, although the effects were weak.) Crowding, prosperity of neighbourhood, and other aspects of household quality showed no effects beyond the expected associations derived from residential care.

4. Accessibility

An unlooked-for effect was the association of better outcomes with a group of "accessibility" variables, which included (at different strengths) having a telephone, good transportation and easy availability of stores and recreational facilities. Patient ease of access to the contacts and facilities in the outside world has been unrecognized in the literature as a mediating variable on patient outcomes: these results suggest it should be given closer attention.

From the above information on patient characteristics and circumstances a complex of variables may be listed, such that most favorable outcomes may be expected when:

a) the patient is now, or has been married

b) the patient is female

c) the patient has good access to the outside world

d) the patient and/or spouse rents an apartment or owns a house

e) the patient's sociological class background is high

f) the patient's income level is high

g) the patient has children in regular contact

The circumstances are set out in approximate ranking of strength based on consideration of three separate analyses - that of the whole patient group, that of extreme scoring patients and the multiple regression analysis.

5. Vocational Assistance

Somewhat surprisingly, the data do not support an association between vocational assistance and good employment outcomes. In this connection it is unfortunate that the System 4 subject group was so small, for in this system alone was there a strong approach to giving the patient assistance to acquire job skills and appropriate employment experience. For the group as a whole a major limiting factor to the demonstration of the usefulness of vocational programs appears to have been their limited application to the least functional patients.

6. Professional Deployment

A considerable amount of attention was devoted to examining systemic differences with respect to professional involvement. The importance of considering disciplinary involvement derives from very basic planning issues. In any mental health program, consultants and staff are the major and most costly type of resource employed. At the same time the whole area of discipline-specific roles, generic roles, optimum discipline ratios and training/licensing considerations is one fraught with contentious and problematic issues in which program administrators tread with great caution. In his account of changes in mental health care during the last 30 years, Leighton has noted that "...much struggling took place among the professions, with each

endeavoring to establish a stronger identity, to achieve greater recognition and to win a realm for independent action." As with so much else that achieves polemical notoriety, there has been a notable lack of basic information on actual inter-disciplinary role divisions.

The data on professional involvement from this study do not comprise in-depth information on discipline-specific roles but are merely "head-count" data on involvement of the disciplines with one particular diagnostic group in four different parts of Canada. They represent a model of initial steps to be taken in any process of rationalizing the mental health disciplinary confusion.

It is clear from these data that physicians and nurses are the professionals primarly involved with the schizophrenic patient in these locations. This may be associated with medication requirements and it would be of interest to have comparable information about other diagnostic groups. A need for better research information on which to base policy for professional deployment is evident.

7. Treatment and Community Care

A consistent thread throughout the analysis of associations between outcomes and system variables is the clear importance of those variables derived from current contact and support at time of interview. Of 12 comparisons on variables of acute care, only three showed significant associations with outcomes, all at the $p < .01$ level. These were, for the total group, treatment

setting and time in hospital and, for patients at scoring extremes, primary therapist during last episode. Of six comparisons between outcomes and planning-rehabilitation variables only one, vocational assistance, showed an association with outcomes for patients at scoring extremes (a negative association at $p < .03$).

On the other hand, of eight comparisons of variables of current contact, all showed significance levels ranging from .02 to .001. These referred to contact agency, contact professionals and prescription/medication variables.

It is possible to dismiss these contrasts as exemplifying the stronger impact of current, as opposed to historical, care, but to do so would be to ignore the important implications of the findings. Because of the chronic nature of the disorder and the general use of neuroleptic medication to control symptomatology and allow discharge, for the greater part of the adult life of the schizophrenic patient he/she is most appropriately serviced by current or on-going community maintenance. The data of the study demonstrate that the presence, nature and quality of this on-going maintenance is of central importance to patients' prognosis and well-being.

8. Differences among four systems

Foremost among the "treatment and care" variables is the overriding variable of which of the four systems of care the patient experienced. In view of the striking elevation of scores for patients in System 2 a closer examination of this system was undertaken, as described in Appendix H. The

notion has been advanced there that the favorable outcomes in Systems 2 and 3 owe something to environmental factors of socio-cultural and economic program and this possibility should not be discarded. In spite of this, the data indications are so strongly in the direction of System 2 being a relatively successful complex of care that we are justified in making the statement:

> Patients in System 2 showed significantly better functional outcomes than patients in the other three systems of care: this was achieved with the lowest index of psychiatric bed use per patient, in a system which has the lowest ratio of psychiatric beds in the country.

With regard to the patients themselves, System 2 patients were not significantly differentiated by demographic parameters, such as gender, marital status and socioeconomic characteristics, but only by a higher proportion living in rural districts and, at a weak confidence level, better availability of transportation ($p < .043$). The former circumstance showed little association with outcomes, but, as we have seen, the transportation variable has assumed some importance. As this variable may owe something to good local public transportation and the availability of good accommodation for patients in convenient, central locations, it may itself be seen as a facet of a total local system of services, but no precise comparative data were obtained to establish this point.

As observed above, because of the comprehensive nature of initial subject identification, refined by application of research diagnostic criteria, in all locations except System 4, there is no reason to think that a pathologically different patient sample was obtained in System 2.

As the better outcomes of System 2 patients cannot be ascribed to independent variables originating in patient demography, socioeconomic circumstance or pathology (although there may be some unmeasured effect of cultural stability and circumstance), beneficial factors must be sought in those aspects of the total system of care which differentiate System 2 from the other systems.

System variables which differentiated System 2 were:

a) less hospitalization in total bed days

b) shorter individual periods in hospital

c) greater use of general, as opposed to psychiatric, hospital

d) lower levels of current medication

e) more lodging in single rooms

f) less rehabilitation conferencing

g) more direct involvement by psychiatrist throughout

h) psychiatrist more likely to maintain contact in community.

The descriptive information on System 2 in Appendix J gives a picture of a structured model of care, the particular features of which are psychiatrists' responsibility for returning patients, regular monitoring of ambula-

tory patients' status, psychiatric monitoring of patients' medication and unusually good arrangements for community accommodation. It cannot be said with certainty that medication was more likely to be adjusted to changing patients' status in that system, but this is suggested. These features, together with the policy and practice of parsimonious bed use, are congruent with the systemic differences listed above. As the primary involvement of a psychiatrist at all phases of care from initial assessment to current community maintenance was associated with better outcomes, we may conclude that, for these schizophrenic patients, the systemic requirement for continuity of psychiatric contact was a major factor in the system's success. Together with a good program to facilitate patient accommodation in the local community, it probably also accounts for the system's marked ability to avoid lengthy periods of hospitalization, and, in some cases, to avoid hospitalization altogether.

While the transportation and rural residence variables may account for some part of the System 2 results, the analysis makes it likely that the centrally important variables lie in the interaction of follow-up contact, supervision and physicians' monitoring of medication.

As the present state of knowledge on the etiology of the schizophrenic group of disorders indicates a genetic component, and recent research seems to implicate several biochemical substrates, such as dopamine reception, peptides, energy metabolism and trace amines, it should not be unexpected that

prescription practices would affect outcomes. (For further information on this research field see Carlsson, 1977, Bowers, 1980, Kessler, 1980, Meltzer, 1980, Hartmann et al, 1980, Seeman, 1980.)

A final commentary on System 2 concerns debate on the concept of community psychiatry. Because of the known emphasis on de-institutionalization policies and encouragement of community care in the province of System 2, there is a general impression that this has also implied a de-emphasis of physician input. System 2 data on treatment and care variables show this to be a mistaken impression, for psychiatrists in this system played a predominant role throughout all stages of patient care. The interest here lies in upsetting the sterotype that "community psychiatry," of which the prominent feature is a comprehensive ambulatory care approach, necessarily involves the general deployment of non-physicians in clinical roles and an absence of medical case direction and supervision.

Methodology and future investigative directions

Attention has been drawn at several points to the question whether or not hospitalization should be employed as a dependent variable in evaluative studies. In spite of the superior performance associated with a low-hospitalization system in this study, the minor association between hospital days per se and functional outcomes* confirms the evidence of national data that hospitalization varies markedly between different parts of the country and should not be regarded as an outcome variable. Set against the complex of

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* No association for patients at extreme scores, only two weak associations - Work and Personal Independence - for the total group.

that hospitalization varies markedly between different parts of the country and should not be regarded as an outcome variable. Set against the complex of policy, administrative decisions, treatment philosophy and individual styles of case management, the employment of time in hospital as a dependent variable seems invalid.

A further comment on outcome variables is the vindication in the study of the employment of concrete functional indices. Examination of the Weissman SAS scale indicated that the employment index component of the SAS draws, not only on work competence, but also on the anxiety-depression axis which runs throughout the scale. In the more functional information schedule of the study, the work competence index taps information independent of another index such as "Social Relationships." This is evident in the differential associations between these indices and patient or systemic variables. It seems important for an investigator to determine exactly what information is required and apply a scale specific to that information.

The poorest performance among the study aggregate scores was given by the "Personal Care" index, which was grossly skewed to higher competence. From this experience it seems advisable to tailor scales to the expected functional level of the subject group. Thus, scales validated on hospital populations, which are the most accessible to researchers (and provided the basic models for this index) are likely to reflect lower-level functions inappropriate for

a group including a large number of ambulatory patients. As ambulatory care is the majority form of psychiatric care, this point is not unimportant.

The surprisingly strong emergence of the group of accessibility variables clearly deserves further study. As they appear to have significant impact on patient function, they should be more acutely defined and tested.

Perhaps the most outstanding indicator for further study is the matter of prescription practices and professional monitoring of medication. In particular, the hypothesis that continuity and regularity of physician contact with medicated schizophrenic patients impacts strongly on their status and well-being should be tested. In the light of a current recommendation in a report to the Ontario Ministry of Health (Heseltine, 1982) that public health nurses should have primary responsibility for monitoring the medication of long-term psychiatric patients, this matter has a certain cogency.

Limitations and Reservations

An enterprise of this nature was at once unique and long overdue. In spite of striking differences among Canadian provinces, never before had an inter-provincial comparative study been attempted. Inevitably, given the geographic breadth of the enterprise and the scope and extent of the phenomena to be examined, there were large practical difficulties to be overcome. These brought in their train inevitable limitations and restrictions, such as are not met in controllable local investigations.

The fieldwork, based on local clinics and hospitals and locally staffed, was carried out in compliance with local requirements for access to charts and approach to patients, resulting in some local differences in gathering the subject group. As much as possible, these matters were handled consistently in each location, for example by the use of the same text of explanation to introduce the interviewer. However, as noted in an earlier chapter, there were inevitable local variations in patient approach - the highly demanding requirement for patient initiative and endorsement in System 4 being the most limiting. At the other extreme, fieldwork for System 3, based on the only mental health facilities in two small towns, was most successful in tracing patients and engaging their compliance. Examination of the patient-descriptive parameters allowed the conclusion that, although subject groups differed in size, they did not differ essentially in other respects.

The reliance on patient chart information to derive data on history of care was another potential source of inconsistency, for it was impossible to establish that charts were kept in a strictly consistent manner across the country. A case in point was the use of the term "case manager," which was one of the specified information points requested. As results came in, and were discussed with field staff, it became apparent that this term was open to different interpretations in different places, being completely unused in some locations. As a result the decision was taken not to report data on this point. Again, because it was not possible to reliably chart medication levels

prescribed from all sources and complied with over the years since history of care began, it was decided that only current medication levels should be used to derive chlorpromazine equivalents.

Also, with regard to chart information, while the principal therapist and type of treatment given were likely to be reliably recorded, information on case conferencing or planning for the patient was probably less reliably and consistently recorded, ranging from swift processing of a batch of patient charts in a routine manner to unrecorded but significant decisions being taken in informal discussion. However, as remarked above, the very fact of recording conferences is a characteristic of a system of care and these data were included in the reported results. As we have seen, the main effect was a demonstration that case-conferencing was most likely in cases of poorly functioning patients, an expected conjunction which supports the likelihood that most data on this point were reliable.

As in any scientific enquiry it would be useful to replicate the enquiry with other subject groups, in this case with other diagnostic groups. Although it is quite obvious, it may be necessary to observe that findings would be very different for the affective disorder group of patients, even more so for the large group of neurotic and borderline personality disorders. In addition, in spite of the large practical difficulties involved in such investigations, it would be most helpful and illuminating to complement these findings by similar enquiries in other locations in Canada.

CHAPTER 6 - CONCLUSIONS

The findings of the study, as they relate to the investigative goals and hypotheses specified in Chapter 2 are as follows:

1. Patient circumstances

- Female patients were found to have a protected status by comparison with male patients, enjoying higher standards of living and found less often in residential care, these circumstances being linked to their more frequent living with relatives, including spouses. Male patients were shown to be at greater risk of falling into states of social deterioration.

- Female patients did better than male patients on all functional outcomes but physical activity.

- Among patient conditions associated with better outcomes were marital status, income and sociological background, nature and status of housing and accessibility of outside amenities.

- There was no inter-systemic difference in living standards, and only one circumstance, availability of transportation, showed a weak differentiation between System 2 and the other systems.

2. Systemic variables

- In System 2 patients were less hospitalized and less medicated on current prescription, and psychiatrists played a more prominent part in rehabilitation and on-going community contact. Deployment of non-medical staff, availability of vocational assistance and special facilities such as nursing programs and community clinics also showed differential proportions between the systems.

- Effects were observed for a range of components, which were particularly strong in the direction of non-medical professions being involved with poorly functional patients.

- One system, System 2, proved to be more successful than the other three in terms of patient outcome, generally followed sequentially by System 3. Those systemic variables which differentiated System 2 were similar to the components of care which were associated with better outcomes across the whole patient group.

- System 2 showed markedly lower bed use than the other systems. Because reliable and comprehensive utilization data were only available in Systems 2 and 3, a full ranking comparison between the systems, and to establish degree of congruence with national data, was not undertaken.

Complex of Health

Throughout the report on results of data gathering, reference has been made to a "complex of health" for this patient group. This is based on the observation of a number of factors which are associated with good outcomes, some of which, because they are in part a function of patient status and well-being, cannot validly be regarded as independent. The list of such attributes, which is of largely descriptive interest, appears below. As may be expected, some factors from the list of favorable prognosticators noted above are included.

Complex of Health for Schizophrenic Patients

a) the patient is, or has been, in a spousal relationship

b) the patient has had children, with whom regular contact is maintained

c) the patient or spouse 1) rent or 2) own 1) and apartment, 2) a house

d) the patient has ready transportation available and good access to shopping and other facilities

e) the patient reads a good deal

f) the patient has a telephone

g) the patient would turn to a family member or friend in a crisis

h) the patient enjoys a high family income

Systems of Care

The elevation of the System 2 patient outcomes implies a more successful system of treatment and care in that location and is consistent with the statistical analysis which showed the systemic variables differentiating System 2 to be those variables which are associated with better patient outcomes overall. Although a precise ratio cannot be ascribed to the relative contribution of system, as against component parts, it is clear from the strength and consistency of total-system results that the benefit to patients was primarily a total-system effect. System 2 is a provincially-supported system strongly directed towards minimizing hospital stays and maintenance of the patient in community. A stereotype of community psychiatry which is largely derived from an American experience of Community Mental Health Centres, is attacked or promoted by proponents on both sides of the debate with little attention to analyzing the Canadian realities. It is possible that one of the more important benefits of the study will be the demonstration that the Canadian experience of public psychiatry differs from the American one, and that careful clinical practices may be successfully pursued in combination with an approach based on retaining patients in normalized community-living modes.

A clear theme emerging from the data analysis is the importance to patients' well-being of on-going arrangements for contact and support following episodes of acute disturbance.

The suggestion of these data that less functional (and less rewarding) patients may be directed from medical professionals and facilities to social workers and social agencies should be examined at local program level. In itself the provision of social service assistance to chronic patients is admirable, but if that contact results in breaking contacts with health facilities, this is a matter for concern in this particular patient group.

Also, and apart from direction towards social services, concern should be focussed on the extent to which psychiatrists undertake a systematic follow-up of their patients in order not to "loose" them. In several cases in Systems 1 and 4 study interviewers encountered quite severely dysfunctional patients who had not seen a psychiatrist or other mental health worker for some years. (As these were patients living in family homes no outside authority was aware of the situation.) Here, something on the lines of System 2's audit system might be worth consideration.

Patient Circumstances

The striking difference in status and well-being of male and female patients is worth notice. It indicates that male patients should be recognized as being at greater risk of socio-economic and general deterioration. A greater awareness by mental health professionals of this risk factor could be combined with more effort to investigate the living conditions of male patients and ensure that they stay in regular contact with local services.

Compounding the gender effect, a difference in well-being between married and single patients was also noted, a difference which can be generalized to distinguish between patients who lack family support and those who are given a degree of family protection and assistance. Thus, "aloneness" should also be regarded by clinicians as a risk factor for social deterioration.

In addition, any specific enquiry into patients' living conditions should include some consideration of accessibility facilitators - those circumstances in the patient's life which enable him most readily to go about the community and be in contact with the activities, facilities and personal contacts of normal community living. (The study data would indicate that, other things being equal, a patient would do better in crowded accommodation in a run-down centre-town neighbourhood than he would in a clean, spacious, suburban lodging far from transportation routes.)

Summary of Study Findings

In summary, program component differences among the four systems of care were identified. Some of these were found to be associated with better patient outcomes and one system, characterized by these program components, was also found to show better patient outcomes. Although no system of care can be lifted from its growth location and applied elsewhere, program indicators have been derived which can be useful in the development and evolution of programs of care for the schizophrenic patient group. In addi-

tion, specifics of gender, circumstance and living conditions, differentially identified in relation to patient outcomes, have indicated useful principles for case management of the patient group.

Early in the report it was observed that the study would address the "large and difficult question of developing consensus on treatment programs" for the schizophrenic patient group. No progress will be made in the management and long-term amelioration of this serious psychiatric disorder, the origin of much suffering, social cost and dislocation, until investigations such as the current enquiry are undertaken. Without soundly based scientific information, unsubstantiated belief in outmoded and harmful credos, combined with principles of political and fiscal expendiency, will continue to result in disjointed and frequently inadequate treatment and care of this unrewarding patient group.

The present study, undertaken in the face of enormous practical difficulties, represents a unique investigative break-through in the field. It is expected to stimulate further needed investigation into the care of the long-term psychiatric patient and will constitute a genuine contribution to the continuing evolution of treatment systems which, as proposed on the first page, should be "at once humane and therapeutic in their effects on individuals and at the same time socially acceptable and efficient in their use of professional and material resources."

APPENDIX A

Criteria to Refine Patient Sample

Exclusion Criteria[1]

1) Alcoholism

2) Evidence of coarse brain disease, including epilepsy.

3) Evidence of toxic, metabolic, endocrine disease.

4) Evidence of mental deficiency.

5) Subsequent rediagnosis to a non-schizophrenic disorder.

Inclusion criteria[2]

A - At least two of the following:

1) Thought broadcasting, insertion, or withdrawal.

2) Delusions of control, other bizarre delusions or multiple delusions.

3) Delusions other than persecutory or jealousy, lasting at least a week.

4) Delusions of any type if accompanied by hallucinations of any type for a least a week.

5) Auditory hallucinations in which either a voice keeps up a running commentary on the subject's behaviours or thoughts as they occur, or 2 or more voices converse with each other.

6) Non-affective verbal hallucinations spoken to the subject.

7) Hallucinations of any type throughout the day for several days or intermittently for at least one month.

8) Definite instances of formal thought disorder.

9) Obvious catatonic motor behaviour.

B - A period of illness lasting at least 2 weeks.

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1 from Bland, R.C.

2 from Spitzer, R.L., Endicott, J., Robins, E.

APPENDIX B

Interprovincial Information Schedule

System	1 2 3 4
Demographic Information	
Gender	Male Female
Age decades	≤ 19 20-29 30-39 40-49 50+
Marital status	Married Widowed Divorced/separated Single Common-law
Income	10 levels at $4,000 intervals
Socio-economic status	4 classes
Information on Living Environment	
Location	Urban Rural
Total number relatives in regular contact	Parents and grand-parents Siblings Children Other, non-spouse
Nature of accommodation	Shared room Single room Suite Apartment House Supervised group home Senior citizen's lodge Long-term hospital Other
Supervision of living	None Visiting In-house

Length of time in present residence -

- 3 months
- 3 months - 1 year
- 1 year - 2 years
- 2 years

Number of co-residents -

- Relatives
- Non-relatives
- (to maximum 8)

Status of Accommodation -

- Rented
- Owned
- Lodging non-family
- Lodging family
- Residential care
- Other

Furnishing -

- Very poor
- Intermediate
- Very good

T.V. -

- Yes
- No

Telephone -

- Yes
- No

Living space -

- Very crowded
- Intermediate
- Very spacious

Number of people sharing bathroom

Number of people sharing kitchen

Quality of neighborhood -

- Deteriorating
- Intermediate
- Prosperous

Accessibility of stores -

- Easily accessible
- Moderately accessible
- Not at all accessible

Recreational resources -

- Easily accessible
- Moderately accessible
- Not at all accessible

Outdoor yard for patient's use - Yes
No

Number of people sharing living room or other recreational area.

If residential care, what are visiting opportunities -

Anytime
Regular, specified
Rarely

If residential care, do agency service personnel visit -

Yes
No

Infomation on Initial Contact with System of Psychiatric Care

Referral to psychiatric care made by:

Family doctor
Hospital emergency
Community clinic
Independent practitioner
Workplace
Public health nurse
Police
Family/friend/self
Other

Assessment-diagnosis made by:
Psychiatrist alone
Psychiatrist and psychologist
Psychiatrist and social worker
Psychiatrist and nurse
Psychiatrist, psychologist and nurse
Psychiatrist, psychologist, nurse and social worker
Psychiatrist, social worker and nurse
Psychiatrist and general practitioner

Involvement of other medical specialist in assessment-diagnosis -

Yes
No

Year of first contact -

Information on Episodes of Acute Care
(Information on last three episodes)

Mode of therapy -

- Individual, intensive psychotherapy
- Individual counselling
- Group therapy
- Behaviour modification
- Occupational therapy
- Milieu therapy
- Chemotherapy
- E.C.T.
- Family therapy

Primary therapist

- Psychiatrist
- Psychologist
- Social Worker
- Nurse
- Occupational therapist
- General practitioner
- Other

Setting

- Psychiatric hospital, voluntary
- Psychiatric hospital, certified
- General hospital
- Day care
- Out-patient, private
- Out-patient, clinic
- Family doctor
- Other

Time spent in hospital in days up to 99 days, by episode

Months in hospital over 99 days, by episode

Total hospital days, all episodes of care

Information on Rehabilitation Services

Persons primarily involved in rehabilitation planning (circle up to 3 choices)

- Psychiatrist
- Psychologist
- Social worker
- Nurse
- General practitioner
- Other medical specialist
- Occupational therapist

Was a multi-disciplinary team conference held -

- Yes
- No

Vocational/employment assistance provided -

(i) Formal program of assessment/training
(ii) Program of assistance in job finding
(iii) Availability of employment tailored to patient need
(i) and (ii)
(i) and (iii)
(ii) and (iii)
(i), (ii) and (iii)
No special assistance
Assistance refused or not required

Maintenance contact agency -

Out-patient clinic
Community clinic
Psychiatrist's office
General practitioner
Local agency
Special nursing program
Other
None

Maintenance contact professional -

Psychiatrist
General practitioner
Psychologist
Social worker (mental health setting)
Social worker (community agency)
Nurse (mental health setting)
Nurse (community)
Vocational counsellor
None

Information on Patient Social Function

1. Work Competence

In domestic planning and management, including domestic budget, does she/he manage -

On her/his own
With assistance
Only if supervised
Not at all
Not applicable

Does she/he buy food for household -

On her/his own
With assistance
Only if supervised
Not at all
Not applicable

Does she/he cook and clean house -

On her/his own
With assistance
Only if supervised
Not at all
Not applicable
No data

Is she/he employed -

Full-time in normal job
Part-time in normal job
In sheltered employment
Not employed
Self-employed
Not applicable

What job does she/he do now -

What job did she/he do before illness - (index of change derived)

How long has she/he been in present job -
- record actual time in months (coded on 5-point time scale)

Is work performance said to be -

Good - no problems
Has some problems
Has a lot of difficulty
Unable to work at all
Not applicable

Is she/he punctual at work

Yes
Most of the time
No
Not applicable

How much sick leave has she/he had in last 6 months -

Less than 10%
10-40%
41-70%
Over 70%
Not applicable

2. Personal Care

Does she/he take responsibility for medication - (check with medication schedule)

Takes full responsibility
Under supervision
Not at all
Not applicable

Is she/he able to take resonsibility for care of own clothing - (includes situations where others carry out actual laundry and sewing)*

Full responsibility
Under supervision
Not at all
Not applicable

Does she/he buy own clothing**

Independently
Only with assistance
Unable to shop for clothing at all
Not applicable

In (a) going to bed, (b) getting up, (c) eating, does she/he -

Function normally and responsibly
Function only with assistance
Not function unless fully supervised
Not applicable

3. Personal Independence

Does she/he handle personal expenses -

Fully independently
Under supervision
Not at all

Does she/he handle her/his own bank account -

Yes
No

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* In the case of men for whom a woman has always effectively supervised care of clothing (laying out clean clothes, deciding what needs dry cleaning, etc.), code not applicable.

** In the case of men for whom a woman has always purchased clothes, or assisted with purchase, code not applicable.

Does she/he participate in recreational and leisure activities (exclude TV) -

Independently
With some help
Only if supervised
Not at all

When was the last time she/he went out -

Less than 1 week ago
1 to 3 weeks ago
More than 3 weeks, less than 2 months ago
2 to 6 months ago
More than 6 months, less than 1 year ago
1 year or more ago

Specify the nature of the outing -

In general life-management and decision making, does she/he -

Take major responsibility for own life management
Take decisions only with approval of others
Take some part in decision making
All decision making by others

Does she/he pursue hobbies (including reading) -

Independently
Under supervision
Not at all

Does she/he drive a car - Yes
No

4. Activities

How does she/he spend the day? (normal week day) -

Morning Afternoon

Evening

Reading - what does she/he read -

How many publications does she/he read in a month -

Has she/he initiated any telephone calls in the last week -

Yes
No

Yes - estimate how many

5. Socializing

Does she/he pursue recreational activities -

In groups independently initiated
In rehabilitation-type groups
With one other person
Solitarily

Does she/he meet with friends outside household -

Once or more a week
Two to three times a month
About one a month
Only casually at work or at school/ over back fence
Not under any condition

Does she/he have relationships with others which are -

Good (normal relationships, some close)
Fair (some relationships, rather restricted)
Poor (no close relationships. possibily quarrelsome)
Very poor (no friends, avoids contacts)

6. Present sense of well-being

Have you had any major problems in the past six months -

Could you tell me about it -
Were you able to handle this problem -

Yes
No
Trying
Not applicable

What made it difficult to handle -

Who would you contact if you had a problem -
(contact person(s) named (up to two))

Psychiatrist
General practitioner
Psychologist
Social Worker
Nurse
Vocational counsellor/OT/police/
pastor
Family
Friend
No one
No other (2nd choice)

In general, are you satisfied with your present life situation -

Very satisfied
Moderately satisfied
Dissatisfied

Are you satisfied with the way you live -

Are you satisfied with your work situation -

Are you satisfied with your social life -

Do you feel you need to have more help -

No
Sometimes
Yes
No reply

Do you feel confident about your plans for the future -

Very confident
Moderately confident
No confidence
No reply

7. Symptomatology

Presence or absence of presenting symptoms at present time -

No signs of symptoms
Slight signs and symptoms some of the time,
or moderate signs and symptoms on rare
occasions

Moderate signs and symptoms some of the time
Severe signs and symptoms some of the time, or moderate signs and symptoms continuously
Continuous and severe signs and symptoms

Information on Treatment Satisfaction

How do you feel about the treatment you received from the _____
name of mental health service

Is there anything you think should have been done differently to the way it was -

Information on Current Medications (for up to 3 prescriptions)

Is she/he currently on medication -

No
Yes
Megavitamins

Compliance

Full compliance
Partial compliance
Non-compliance
No medication prescribed

Duration in months

Method of administration - Orally
Intravenous
Intramuscular
Other

Person administering - Self
Physician
Nurse
Other

Dosage in mgms.

Frequency per week

APPENDIX C

Living Conditions by Gender

TABLE 1

Patients Living with Relatives, Non-Relatives and Alone, by Gender.

Count Row Percentage	Living with Relatives	Living with Non-Relatives	Living with Both	Not Living Alone	Living Alone	Patient Totals	Average No. Relatives in Households*
Males							
Count	55	43	5	93	16	109	2.4
Percentage	50.4	39.5	4.6	85.3	14.7	100.0	
Females							
Count	56	8	2	62	11	73	1.7
Percentage	76.7	10.9	2.7	84.9	15.1	100.0	
Both Sexes							
Count	111	51	7	155	27	182	2.1
Percentage	61.0	28.0	3.8	85.2	14.8	100.0	

* Of households where relatives live.

TABLE 2

Nature of Accommodation By Gender

Nature of Accommodation	Males	Females	Totals
Single Room	9 8.3	2 2.7	11 6.0
Suite*	8 7.3	1 1.4	9 4.9
Total one-room Accommodation	17 15.6	3 4.1	20 11.0
Apartment	20 18.3	16 21.9	35 19.2
House	54 49.5	49 67.1	104 57.1
Trailer	0 0.0	2 2.7	2 1.1
Total private Accommodation	91 83.5	70 95.9	161 88.5
Supervised Group House	12 11.0	1 1.4	13 7.1
Senior Citizen Lodge	0 0.0	1 1.4	1 0.5
Hospital	6 5.5	1 1.4	7 3.8
Total all forms residential care	18 16.5	3 4.1	21 11.5
TOTALS	109 100.0	73 100.0	182 100.0

* Single room including one plumbing facility.

TABLE 3

Status of Accommodation By Gender

Status of Accommodation	Males	Females	Totals
Rented	41 37.6	28 38.4	69 37.9
Owned	16 14.7	30 41.1	46 25.3
Non-family boarding	7 6.4	1 1.4	8 4.4
Family boarding	32 29.4	11 15.1	43 23.6
Residential care	13 11.9	3 4.1	16 8.8
Totals	109 100.0	73 100.0	182 100.0

The apparent discrepancy with regard to numbers of male patients in "residential care" derives from the separation of smaller and larger group homes on the right-hand 'Status' column. Here five small group homes have been counted in 'non-family boarding'.

TABLE 4

Household Income Levels by Gender

Count Row Percentage	MALE	FEMALE	TOTALS
6,000.	53 48.6	15 20.5	68 37.4
6,100. - 10,000.	12 11.0	18 24.6	30 16.5
10,100. - 14,000.	13 11.9	7 9.6	20 11.0
14,100. - 18,000.	3 2.8	11 15.1	14 7.7
18,100. - 22,000.	10 9.2	5 6.8	15 8.2
22,100. - 26,000.	8 7.3	7 9.6	15 8.2
26,100	10 9.1	10 13.7	20 11.1
Totals	109 100.0	73 100.0	182 100.0
Average* Income	$11,551.	$14,726.	$12,824.

* Gender difference significant at p .02.

TABLE 5

Sociological Groups by Gender

Hi Sociological Levels Lo

Count Row Percentage	1	2	3	4	Totals
Males	1 0.9	27 24.8	62 56.9	19 17.4	109 100.0
Females	2 2.7	19 26.0	43 58.9	9 12.3	73 100.0
All S's	3 1.6	46 25.3	105 57.8	28 15.4	182 100.0

TABLE 6
Status of Accommodation by Income Group

Count Row Percentage	Rented	Owned	Non-family Boarding	Family Boarding	Residential Care	Totals
6,000	32 47.1	9 13.2	5 7.4	10 14.7	12 17.6	68 100.0
6,100-10,000	14 46.7	6 20.0	1 3.3	7 23.3	2 6.7	30 100.0
10,100-14,000	8 40.0	6 30.0	2 10.0	4 20.0	0 0.0	20 100.0
14,100-18,000	5 35.7	6 42.9	0 0.0	3 21.4	0 0.0	14 100.0
18,100-22,000	5 33.3	4 26.7	0 0.0	6 40.0	0 0.0	15 100.0
22,100-26,000	3 20.0	6 40.0	0 0.0	6 40.0	0 0.0	15 100.0
26,100	2 10.0	9 45.0	0 0.0	7 35.0	2 10.0	20 100.0
TOTALS	69 37.9	46 25.3	8 4.4	43 23.6	16 8.8	182 100.0

TABLE 7

Nature of Accommodation by Income group

Count Row Percentage Income Group	One-room Accommo-dation	Apartment	House	Trailer	All forms residential care	Total
6,000	13 19.1	14 20.6	23 33.8	1 1.5	17 25.0	68 100.0
6,100-10,000	4 13.3	9 30.0	14 46.7	1 3.3	2 6.7	30 100.0
10,100-14,000	1 5.0	5 25.0	14 70.0	0 0.0	0 0.0	20 100.0
14,100-18,000	0 0.0	2 14.3	12 85.7	0 0.0	0 0.0	14 100.0
18,100-22,000	0 0.0	4 26.7	11 73.3	0 0.0	0 0.0	15 100.0
22,100-26,000	2 13.3	0 0.0	13 86.7	0 0.0	0 0.0	15 100.0
26,100	0 0.0	1 5.0	17 85.0	0 0.0	2 10.0	20 100.0
TOTALS	20 11.0	35 19.2	104 57.1	2 1.1	21 11.5	182 100.0

104 patients, 57.1% of the total, lived in houses, by far the largest single type of accommodation. Of these, 23, or 22%, had household incomes at or below $6,000. An indication of a relatively high standard of Canadian housing is that in the lowest income group as many as 33.8% of the patients lived in houses.

APPENDIX D

Living Conditions by System

TABLE 1

Nature of Accommodation, by System

Count Row Percentage	One Room	Suite	Apt.	House	Resid-ential Care	Trailer	TOTALS
System 1	6 11.8	0 0.0	13 25.5	28 54.9	4 7.8	0 0.0	51 100.0
System 2	2 5.4	4 10.8	7 18.9	20 54.1	2 5.4	2 5.4	37 100.0
System 3	3 4.2	5 6.9	9 12.5	41 56.9	14 19.4	0 0.0	72 100.0
System 4	0 0	0 0	6 27.3	14 63.6	2 9.1	0 0.0	22 100.0
All Systems	11 6.0	9 4.9	35 19.2	103 56.6	22 12.1	2 1.1	182 100.0

TABLE 2

Numbers of Patients Currently Living in Urban or Rural* Districts, by System

Count Row Percentage	Urban	Rural	Totals
System 1	41 80.4	10 19.6	51 100.0
System 2	27 73.0	10 27.0	37 100.0
System 3	59 81.9	13 18.1	72 100.0
System 4	21 95.5	1 4.5	22 100.0
All Systems	148 81.3	34 18.7	182 100.0

* Defined as settlements of population less than 4,000

TABLE 3

Quality of Neighborhood by System

Count Row Percentage	Poor	Intermediate	Prosperous	Totals
System 1	3 6.0	34 68.0	13 26.0	50 100.0
System 2	3 8.1	23 62.2	11 29.7	37 100.0
System 3	2 2.8	56 77.8	14 19.4	72 100.0
System 4	3 13.6	14 63.6	5 22.7	22 100.0
All Systems	11 6.1	127 70.2	43 23.8	181 100.0

TABLE 4

Availability of Transportation by System

Count Row Percentage	Readily Available	Moderately Available	Not Available	Totals
System 1	26 52.0	23 46.0	1 2.0	50 100.0
System 2	27 73.0	10 27.0	0 0.0	37 100.0
System 3	38 52.8	28 38.9	6 8.3	72 100.0
System 4	18 81.8	3 13.6	1 4.5	22 100.0
All Systems	109 60.2	64 35.4	8 4.4	181 100.0

TABLE 5

Availability of Outdoor Yard for Patient's Use, by System

Count Row Percentage	Yes	No	Totals
System 1	40 78.4	11 21.6	51 100.0
System 2	29 78.4	8 21.2	37 100.0
System 3	62 89.9	7 10.1	69 100.0
System 4	20 90.9	2 9.1	22 100.0
All Systems	151 84.4	28 15.6	179 100.0

TABLE 6

Availability of Recreational Facilities, by System

Count Row Percentage	Easily Accessible	Moderately Accessible	Not Accessible	Total
System 1	26 51.0	24 47.1	1 2.0	51 100.0
System 2	22 59.5	14 37.8	1 2.7	37 100.0
System 3	39 54.2	31 43.1	2 2.8	72 100.0
System 4	13 59.1	6 27.3	3 13.6	22 100.0
All Systems	100 54.9	75 41.2	7 3.8	182 100.0

TABLE 7

Accessibility of Stores by System

Count Row Percentage	Easily Accessible	Moderately Accessible	Not Accessible	Total
System 1	33 66.0	15 30.0	2 4.0	50 100.0
System 2	28 75.7	9 24.3	0 0.0	37 100.0
System 3	44 61.1	26 36.1	2 2.8	72 100.0
System 4	18 81.8	2 9.1	2 9.1	22 100.0
All Systems	123 68.0	52 28.7	6 3.3	181 100.0

TABLE 8

Quality of Household Furnishings by System

Count Row Percentage	Very Poor	Intermediate	Very Good	Totals
System 1	11 22.4	20 40.8	18 36.7	49 100.0
System 2	5 13.9	20 55.6	11 30.6	36 100.0
System 3	9 13.0	52 75.4	8 11.6	69 100.0
System 4	6 27.3	8 36.4	8 36.4	22 100.0
All Systems	31 17.6	100 56.8	45 25.6	176 100.0

TABLE 9

Spaciousness of Residence, by System

Count Row Percentage	Very Crowded	Intermediate	Very Spacious	Totals
System 1	8 16.0	22 44.0	20 40.0	50 100.0
System 2	3 8.1	24 64.9	10 27.0	37 100.0
System 3	8 11.1	53 73.6	11 15.3	72 100.0
System 4	2 9.1	13 59.1	7 31.8	22 100.0
All Systems	21 11.6	112 61.9	48 26.5	181 100.0

TABLE 10

Telephone in Household, by System

Count Row Percentage	Yes	No	Totals
System 1	50 98.0	1 2.0	51 100.0
System 2	33 89.2	4 10.8	37 100.0
System 3	63 87.5	9 12.5	72 100.0
System 4	22 100.0	0 0.0	22 100.0
All Systems	168 92.3	14 7.7	182 100.0

TABLE 11

Television in Household, by System

Count Row Percentage	Yes	No	Totals
System 1	49 96.1	2 3.9	51 100.0
System 2	34 94.4	2 5.6	36 100.0
System 3	68 94.4	4 5.6	72 100.0
System 4	22 100.0	0 0	22 100.0
All Systems	173 95.6	8 4.4	181 100.0

TABLE 12

Persons Sharing Livingroom*, by System

Count Row Percentage	0	1	2	3	4	5	6	7	8	Total	Average Score
System 1	6 13.0	12 26.1	10 21.7	6 13.0	7 15.2	2 4.2	0 0.0	0 0.0	2 4.4	45 100.0	2.31
System 2	6 17.6	11 32.4	5 14.7	7 20.6	2 5.9	1 2.9	0 0.0	0 0.0	2 5.9	34 100.0	2.09
System 3	15 23.1	11 16.9	14 21.5	12 18.5	3 4.6	1 1.5	2 3.1	3 4.6	4 6.2	65 100.0	2.42
System 4	2 10.0	4 20.0	7 35.0	5 25.0	1 5.0	0 0.0	0 0.0	1 5.0	0 0.0	20 100.0	2.20
All Systems	29 17.6	38 23.0	36 21.8	30 18.2	13 7.9	4 2.4	2 1.2	4 2.4	8 4.9	164 100.0	2.28

* Cases of patients in residential care excluded.

TABLE 13

Number Sharing Bathroom, by System*

Count Row Percentage	0	1	2	3	4	5	6	7	8	Total
System 1	6 12.8	12 25.5	12 25.5	5 10.6	7 14.9	2 4.3	0 0.0	0 0.0	3 6.4	47 100.0
System 2	5 14.3	11 31.4	5 14.2	8 22.9	4 11.4	0 0.0	1 2.9	0 0.0	1 2.9	35 100.0
System 3	13 19.4	11 16.4	15 22.4	13 19.4	3 4.5	2 3.0	2 3.0	3 4.5	5 7.5	67 100.0
System 4	2 10.0	4 20.0	6 30.0	5 25.0	2 10.0	0 0.0	0 0.0	1 5.0	0 0.0	20 100.0
All Systems	26 15.4	38 22.5	38 22.5	31 18.3	16 9.5	4 2.4	3 1.8	4 2.4	9 5.3	169 100.0

* Cases of patients in residential care excluded.

APPENDIX E

TABLE 1

Referring Agency by System

SYSTEM

	1		2		3		4		Whole Group	
Referring Agency	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
General Practitioner	10	19.6	16	43.2	15	20.8	13	59.1	54	29.7
Hospital Emergency	0	0.0	0	0.0	0	0.0	4	18.2	4	2.2
Community Clinic	0	0.0	3	8.1	4	5.6	2	9.1	9	5.0
Counselling Agency	1	2.0	2	5.4	7	9.7	0	0.0	10	5.5
Independent Practitioner (non-medical)	0	0.0	0	0.0	1	1.4	0	0.0	1	0.6
Place of Work	0	0.0	0	0.0	2	2.8	1	4.6	3	1.7
Public Health Nurse	0	0.0	0	0.0	1	1.4	0	0.0	1	0.6
Police	7	13.7	1	2.7	0	0.0	0	0.0	8	4.4
Family, Self, Friend, Other	33	64.7	15	40.5	42	58.3	2	9.1	92	50.6
Total	51	100.0	37	100.0	72	100.0	22	100.0	182	100.0

APPENDIX E

TABLE 2

Professionals Recorded In Assessment/Diagnosis

SYSTEM

	1		2		3		4		Whole Group	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Psychiatrist	28	71.8	33	89.2	56	77.8	19	86.4	136	80.0
Psychiatrist/Psychologist	1	2.6	1	2.7	3	4.2	3	13.4	8	4.7
Psychiatrist/Social Worker	4	10.3	0	0.0	5	6.9	0	0.0	9	5.3
Psychiatrist/Nurse	5	12.8	2	5.4	5	6.9	0	0.0	12	7.1
Psychiatrist/Psychologist Social Worker/Nurse	1	2.6	0	0.0	0	0.0	0	0.0	1	0.6
Psychiatrist/Social Worker Nurse	0	0.0	0	0.0	3	4.2	0	0.0	3	1.8
Psychiatrist/Other M.D.	0	0.0	1	2.7	0	0.0	0	0.0	1	0.6
Total	39	100.0	37	100.0	72	100.0	22	100.0	170	100.0

Psychologist involved =9
Social worker involved = 13
Nurse involved = 16

APPENDIX E

TABLE 3

Modes of Therapy, by System

(3 treatment episodes, 2 modes each possible)

Count Row Percentage	Psycho-therapy	Counsel-ling	Group therapy	Family therapy	Beh.* Mod.	O.T.**	Milieu therapy	Chemo-therapy	ECT***	TOTAL
Province 1	3 1.1	1 0.4	23 8.8	0 0.0	9 3.4	20 7.6	54 20.6	136 51.9	16 6.1	262 100.0
Province 2	6 4.4	31 22.6	7 5.1	1 0.7	1 0.7	4 2.9	0 0.0	73 53.3	14 10.2	137 100.0
Province 3	2 0.5	52 13.2	6 1.5	2 0.5	0 0.0	9 2.3	95 24.2	198 50.4	29 7.4	393 100.0
Province 4	3 3.3	9 9.8	3 3.3	2 2.2	3 3.3	6 6.5	10 10.9	46 50.0	10 10.9	92 100.0
All Provinces	14 1.6	93 10.5	39 4.4	5 0.6	13 1.5	39 4.4	159 18.0	453 51.2	69 7.8	884 100.0

* Behaviour Modification Therapy
** Occupational Therapy
*** Electro-Convulsive Therapy

TABLE 4

Modes of Therapy, by System, Grouped

(3 treatment episodes (2 modes each possible))

Count Row Percentage	Counselling Psycho-Therapy etc.	O.T.*	Milieu Therapy	Chemo-therapy	ECT **	Total
Province 1	36 13.7	20 7.6	54 20.6	136 51.9	16 6.1	262 100.0
Province 2	46 33.6	4 2.9	0 0.0	73 53.3	14 10.2	137 100.0
Province 3	62 15.8	9 2.3	95 24.2	198 50.4	29 7.4	393 100.0
Province 4	20 21.7	6 6.5	10 10.9	46 50.0	10 10.9	92 100.0
All Provinces	164 18.6	39 4.4	159 18.0	453 51.2	69 7.8	884 100.0

* Occupational Therapy
** Electro-convulsive Therapy

TABLE 5

Modes of Therapy, (two possible) last episode by System

Count Row Percentage	Various forms of Counselling/ Psychotherapy	O.T.*	Milieu Therapy	Chemo-therapy	ECT**	Total
System 1	11 11.3	9 9.3	21 21.6	49 50.5	7 7.2	97 100.0
System 2	18 28.1	3 4.7	0 0.0	36 56.3	7 10.9	64 100.0
System 3	37 27.0	1 0.7	24 17.5	73 53.3	2 1.5	137 100.0
System 4	7 18.0	3 7.7	2 5.1	20 51.3	7 17.9	39 100.0
All Systems	73 21.7	16 4.8	47 13.9	178 52.8	23 6.8	337 100.0

* Occupational Therapy
** Electro-convulsive Therapy

APPENDIX E

TABLE 6

Professionals Named as Primary Therapist (3 episodes), by System

SYSTEM

PROFESSIONAL	1		2		3		4		Whole Group	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Psychiatrist	37	28.7	56	73.7	56	28.0	48	96.0	197	43.3
Psychologist	1	0.8	1	1.3	1	0.5	2	4.0	5	1.1
Social Worker	12	9.3	3	4.0	15	7.5	0	0.0	30	6.6
Nurse	78	60.5	12	15.8	94	47.0	0	0.0	184	40.4
Occupational Therapist	1	0.8	4	5.3	0	0.0	0	0.0	5	1.1
General Practitioner	0	0.0	0	0.0	32	16.0	0	0.0	32	7.0
Other	0	0.0	0	0.0	3	1.0	0	0.0	2	0.4
TOTAL	129	100.0	76	100.0	200	100.0	50	100.0	455	100.0

TABLE 7

Vocational Assistance Components Recorded, by System

Count Row Percentage	Assessment/ Training	Job-finding Assistance	Special Employment	Total Recorded Components
System 1	8 66.7	3 25.0	1 8.3	12 100.0
System 2	6 40.0	7 46.7	2 13.3	15 100.0
System 3	14 29.8	18 38.3	15 31.9	47 100.0
System 4	2 20.0	2 20.0	6 60.0	10 100.0
All Provinces	30 35.7	30 35.7	24 28.6	84 100.0

APPENDIX E

TABLE 8

Professionals Involved in Rehabilitation Planning by System

(Up to Three Possible Named)

LOCATION

PROFESSIONAL	1		2		3		4		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Psychiatrist	91	41.7	74	56.9	155	32.0	45	39.1	365	38.5
Psychologist	7	3.2	2	1.5	10	2.1	2	1.7	21	2.2
Social Worker	47	21.6	17	13.1	38	7.9	22	19.1	124	13.1
Nurse	45	20.6	28	21.5	156	32.2	23	20.0	252	26.6
General Practitioner	22	10.1	4	3.1	112	23.1	1	0.9	139	14.7
Occupational Therapist	5	2.3	2	1.5	10	2.1	22	19.1	39	4.1
Other Medical Specialist	1	0.5	3	2.3	3	0.6	0	0.0	7	0.7
TOTAL	218	100.0	130	100.0	484	100.0	115	100.0	947	100.0

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TABLE 9

Availability of Vocational Assistance, by System

Count Row Percentage	Assessment/ Training (i)	Job-finding (ii)	Special Employment (iii)	(i) + (ii)	(i) + (iii)	(ii) + (iii)	i+ii + (iii)	Total number receiving assistance	No assistance	Assistance refused	No data	Total
System 1	7 13.7	1 2.0	0 0.0	1 2.0	0 0.0	1 2.0	0 0.0	10 19.6	37 72.5	0 0.0	4 7.8	51 100.0
System 2	3 8.1	3 8.1	1 2.7	3 8.1	0 0.0	1 2.7	0 0.0	11 29.7	24 64.9	1 2.7	1 2.7	37 100.0
System 3	[illegible] [illegible]	1 1.4	7 9.7	10 13.9	1 1.4	4 5.6	3 4.2	26 36.1	33 45.8	6 8.3	7 9.7	72 100.0
System 4	[illegible] .5	2 9.1	5 22.7	0 0.0	1 4.5	0 0.0	0 0.0	9 40.9	7 31.8	1 4.5	5 22.7	22 100.0
All Provinces	11 6.0	7 3.8	13 7.1	14 7.7	2 1.1	6 3.3	3 1.6	56 30.8	101 55.5	8 4.4	17 9.3	182 100.0

TABLE 10

Rehabilitation Conference Held

3 episodes, by System

Count Row percentage	Yes	No	Total
System 1	36 38.7	57 61.3	93 100.0
System 2	18 27.7	47 72.3	65 100.0
System 3	100 67.6	48 32.4	148 100.0
System 4	5 11.4	39 88.6	44 100.0
All Systems	159 45.4	191 54.6	350 100.0

APPENDIX E

TABLE II

Prescribed weekly chlorpromazine equivalent levels by System - current prescriptions

Count Row Percentage	1000	1600-1999	2000-2999	3000-3999	4000-4999	5000-5999	6000-6999	7000-7999	8000-8999	9000	Number of Patients Medicated	Approximate Mean Level (mgms per week)	Percentage of Patients Prescribed Medication
System 1	7 20.5	11 32.4	4 11.8	2 5.9	4 11.8	2 5.9	1 2.9	0 0.0	2 5.9	1 2.9	34 100.0	2,435.3	66.7
System 2	8 42.1	3 15.8	2 10.5	3 15.8	1 5.3	1 5.3	0 0.0	0 0.0	1 5.3	0 0.0	19 100.0	2,236.8	51.4
System 3	17 27.9	22 35.5	12 19.4	2 3.2	2 3.2	5 4.8	1 1.6	1 1.6	1 1.6	2 3.2	63 100.0	2,309.5	87.5
System 4	3 18.8	3 18.8	4 25.0	2 12.5	1 6.3	1 6.3	0 0.0	1 6.3	0 0.0	1 6.3	16 100.0	3,125.0	72.7
All Systems	35 25.5	38 28.8	22 16.7	9 6.8	8 6.1	7 5.3	2 1.5	2 1.5	4 3.0	4 3.0	132 100.0	2,430.3	72.5

APPENDIX E

TABLE 12

Probability Levels of Pearsonian Correlations Between Treatment Variables

	Referral	Assessment		Treatment			Rehabilitation			
	Health Referring Agency	Multi-Discipline Assessment	Non-Psychiatric Specialist	Primary Therapist	Psychiatric Hospital Setting	Days in Hospital	Rehab. Conference Held	Vocational Assistance Given	Maintenance Agency	Maintenance Professional
Non-psychiatric Specialist	.018									
Primary Therapist	M.D. Therapist .000	Non-M.D. Therapist .001	Non-M.D. Therapist .001							
Hospital Setting	.002									
Hospital Days					.000					
Rehabilitation Conference Held				Non-M.D. Therapist .011	.000	.001				
Vocational Assistance Given			No assistance .003				.000			
Maintenance Agency		Non-medical Agency .04		MD Therapist Health Agency .000			Non-health Agency .047			
Maintenance Professional			Non-M.D. .018	Both M.D.'s .000				M.D. .02	M.D. & Health Agency .000	
Medication Prescribed	Non-health Referral .003						.009		Health Agency no med. .02	
Medication Method	Oral .001						Injection .046		Oral, Health Agency .000	Oral M.D. .027
Person Giving Medication	Self .007						Non-patient .046		Self, Health Agency .000	
High Medication Level		.005			.007		.048			

Appendix F

Patient Scores on Outcome Measures

TABLE 1

Work Competence Scores, by System — High Competence

Count Row percentage	0-1	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	Total	Means
System 1	7 13.7	12 23.5	3 5.9	1 2.0	3 5.9	4 7.8	8 15.7	8 15.7	5 9.8	0 0.0	51 100.0	8.2
System 2	1 2.7	10 27.0	2 5.4	0 0.0	2 5.4	2 5.4	2 5.4	11 29.7	5 13.5	2 5.4	37 100.0	10.2
System 3	5 6.9	19 26.4	6 8.3	1 1.4	7 9.7	5 6.9	4 5.6	17 23.6	5 6.9	3 4.2	72 100.0	8.7
System 4	2 9.1	5 22.7	3 13.6	0 0.0	2 9.1	1 1.4	3 13.6	5 22.7	1 1.4	0 0.0	22 100.0	8.2
All Systems	15 8.2	46 25.3	14 7.7	2 1.1	14 7.7	12 6.6	17 9.3	41 22.5	16 8.8	5 2.7	182 100.0	8.8

TABLE 2

Personal Independence Scores, by System

High Competence

Count Row percentage	0-1	2-3	4-5	6-7	8-9	10-11	12-13	Total	Means
System 1	1 2.0	2 3.9	3 5.9	6 11.8	6 11.8	13 25.5	20 39.2	51 100.0	9.7 9.7
System 2	2 5.4	1 2.7	2 5.4	3 8.1	3 8.1	7 18.9	19 51.4	37 100.0	10.0
System 3	1 1.4	2 2.8	5 6.9	13 18.1	8 11.1	15 20.8	28 38.9	72 100.0	9.6
System 4	2 9.1	1 4.5	1 4.5	1 4.5	4 18.2	8 36.4	5 22.7	22 100.0	8.9
All Systems	6 3.3	6 3.3	11 6.0	23 12.6	21 11.5	43 23.6	72 39.6	182 100.0	9.6

TABLE 3

Personal Care Scores, by System

High Performance

Count Row percentage	0-1	2-3	4-5	6-7	8-9	10-11	12-13	Total	Means
System 1	1 2.0	0 3.9	0 5.9	3 11.8	3 11.8	14 25.5	30 39.2	51 100.0	10.8 9.7
System 2	0 0.0	0 0.0	2 5.4	1 2.7	3 8.1	8 21.6	23 62.2	37 100.0	10.8
System 3	1 1.3	1 1.3	0 0.0	3 4.2	3 4.2	32 44.4	32 44.4	72 100.0	10.7
System 4	0 0.0	1 4.5	2 9.0	0 0.0	2 9.0	8 36.4	9 40.9	22 100.0	10.0
All Systems	2 1.1	2 1.1	4 2.2	7 3.8	11 6.0	62 34.1	94 51.6	182 100.0	10.7

TABLE 4

Social Relationship Agrregate Scores, by System

High Competence

Count Row percentage	0-1	1-5	6-10	11-15	16-20	21-25	Totals	Average Score
System 1	1 2.0	7 13.7	14 27.5	23 45.1	6 11.8	0 0.0	51 100.0	10.6
System 2	0 0.0	5 13.5	4 10.8	10 27.0	17 46.0	1 2.7	37 100.0	13.7
System 3	1 1.4	9 12.5	17 23.6	34 47.2	11 15.3	0 0.0	72 100.0	11.2
System 4	0 0.0	4 18.2	7 31.8	8 36.4	3 13.6	0 0.0	22 100.0	10.3
All Systems	2 1.1	25 13.7	42 23.1	75 41.2	37 20.3	1 0.6	182 100.0	11.4

TABLE 5

Presence of Symptoms, by System

Count Row Percentage	Continous and Severe Symptoms (Score 1)	Severe at times or Moderate all time (Score 3)	Moderate at times (Score 5)	Slight at times or Moderate rarely (Score 7)	No Symptoms (Score 9)	Total	Average Score
System 1	9 17.6	11 21.6	12 23.5	11 21.6	8 15.7	51 100.0	4.92
System 2	1 2.7	3 8.1	5 13.5	16 43.2	12 32.4	37 100.0	6.89
System 3	4 5.6	9 12.7	15 21.1	36 50.7	7 9.9	71 100.0	5.93
System 4	1 4.5	7 31.8	6 27.3	7 31.8	1 4.5	22 100.0	5.00
All Systems	15 8.3	30 16.6	38 21.0	70 38.7	28 15.5	181 100.0	5.73

TABLE 6

Level of Physical Activity, by System

	High Levels										
Count Row Percentage	0-1	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	Total	Average Score
System 1	0 0.0	1 2.0	8 15.7	10 19.6	8 15.7	15 29.4	4 7.8	4 7.8	1 2.0	51 100.0	9.2
System 2	0 0.0	0 0.0	0 0.0	3 8.1	9 24.3	13 35.1	6 16.2	4 10.8	2 5.4	37 100.0	10.8
System 3	1 1.4	1 1.4	7 13.7	6 8.3	23 31.9	18 2.5	11 15.3	3 4.2	2 3.8	72 100.0	9.3
System 4	1 4.5	1 4.5	1 4.5	3 13.6	7 31.8	6 27.3	2 9.0	1 4.5	0 0.0	22 100.0	8.6
All Systems	2 1.0	3 1.6	16 8.8	22 12.1	47 25.8	52 28.6	23 12.6	12 6.5	5 2.7	182 100.0	9.4

TABLE 7

Global Outcome Scores, by System

	High Competence											
Count Row percentage	0-1	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	Total	Means
System 1	7 13.7	12 23.5	3 5.9	1 2.0	3 5.9	4 7.8	8 15.7	8 15.7	5 9.8	0 0.0	51 100.0	8.2
System 2	1 2.7	10 27.0	2 5.4	0 0.0	2 5.4	2 5.4	2 5.4	11 29.7	5 13.5	2 5.4	37 100.0	10.2
System 3	5 6.9	19 26.4	6 8.3	1 1.4	7 9.7	5 6.9	4 5.6	17 23.6	5 6.9	3 4.2	72 100.0	8.7
System 4	2 9.1	5 22.7	3 13.6	0 0.0	2 9.1	1 1.4	3 13.6	5 22.7	1 1.4	0 0.0	22 100.0	8.2
All Systems	15 8.2	46 25.3	14 7.7	2 1.1	14 7.7	12 6.6	17 9.3	41 22.5	16 8.8	5 2.7	182 100.0	8.8

APPENDIX G

Patient Activities and Problems

In order to gather information on patients' activities during normal days, patients were asked what they did a) in the mornings, b) in the afternoons, c) in the evenings. For mornings and afternoon's, the first activities mentioned were taken, one for each, although the afternoon's activity could repeat the one named for the morning. For evenings, first two named activities were noted. Also, when asked the last time the subject had gone out, the activity engaged in was noted and coded in the same way.

The following 40 activities were named at the frequencies shown below. They were coded by ranging from 0 to 4 for degree of physical activity and from 0 to 2 for socializing component judged to be inherent in the activity. These codes are also shown.

TABLE 1

Activities Named by Patients

Activity	Freq.	Code Act.	Code Soc.	Activity	Freq.	Code Act.	Code Soc.
Animals[1]	2	2	1	Music[5]	10	4	1
Bingo	4	2	1	Nothing	49	0	0
Camping Picnicking	2	4	2	Odd jobs	18	3	0
Cards	5	2	2	Praying	7	1	0
Carpentry[2]	6	3	0	Radio[6]	19	1	0
Children	11	2	2	Reading	40	1	0
Classes	17	2	2	Relaxing[7]	31	1	1
Coffee shop	5	1	2	Shopping	34	2	1
Cooking	6	3	1	Sleeping	40	0	0
Cycling	2	4	0	Special Group[8]	17	2	2
Dancing	11	4	2	Sports	21	4	2
Driving[3]	11	1	0	Stamps	1	1	0
Employed	114	3	1	Tavern etc.	36	1	2
Fishing	1	4	1	Telephone	5	1	1
Home accounts	1	2	0	Treatment	24	2	1
Housework	52	3	0	T.V.	112	1	0
Knitting[4]	13	2	0	Vehicle[10]	2	3	0
Looking for work	4	2	1	Visiting	92	2	2
Meetings	9	2	2	Walking	44	4	0
Movies	13	2	1	Writing[11]	4	2	1

NOTES:

1. Animal care or play
2. Carpentry/sculpture
3. "Driving around"
4. Knitting/sewing
5. Making Music
6. Radio/stereo
7. Relaxing in family
8. Meeting of special group e.g. rehabilitation
9. Tavern/pool/coffee shop
10. Vehicle maintenance
11. Writing letters

Patients were asked what their current problems were and up to two answers were taken. The replies were grouped as shown in the table below.

TABLE 2

Identification of Problems by Patients (up to two taken)

Problems	Number of responses	Percentage
"None"	143	49.7
Money	16	5.6
Symptoms	44	15.3
Job	25	8.7
Sex	5	1.7
Family	27	9.4
Friends	15	5.2
Residence	13	4.5
Total	288	100.0

The high proportion of "none" replies does not necessarily indicate freedom from care. Various answers indicative of physical or psychological symptomatology received the highest problem-area mentions, followed by job situations and family problems.

APPENDIX H

Pearsonian Correlations Between Outcome Measures

TABLE 1

Pearsonian Correlations Between Outcome Measures on Interprovincial Schedule

r Probability	Symptoms	Work Competence	Personal Care	Personal Independence	Social Relationships
General Satisfaction	.522 .000				
Symptoms					
Work Competence	.395 .000				
Personal Care	.426 .000	.291 .000			
Personal Independence	.540 .000	.285 .000	.565 .000		
Social Relationships	.351 .000	.488 .000	.240 .001	.577 .000	
Global Score	.658 .000	.697 .000	.622 .000	.754 .000	.742 .000

TABLE 2

Congruence of Weissman SAS and Interprovincial Schedule - probability levels of Pearsonian Correlations

Weissman Global Scores	Work Competence	Personal Independence	Personal Care	Social Relationships	Absence of Symptoms	Physical Activity	Global Score	Number of Patients scored
Work	0.000	0.000	0.000	0.000	0.000	0.002	0.000	128
Social	0.000	0.000	0.000	0.000	0.000	0.000	0.000	179
Extended Family	0.000	0.000	0.002	0.000	0.000	0.002	0.000	176
Parental	n.s.	0.000	n.s.	0.004	0.000	n.s.	0.002	50
Overall	0.000	0.000	0.000	0.000	0.000	0.000	0.000	180
Average value of r	0.3591	0.4882	0.3136	0.4806	0.6086	0.2476	0.5976	

Appendix I

Scores on Weissman Social Adjustment Scale

TABLE 1

Weissman SAS Scores on Work Items, by System

High Performance Low Performance

Count Row Percentage	0	1	2	3	4	5	6	7	Totals	Means
System 1	0 0.0	6 17.1	11 31.4	9 25.7	1 2.9	2 5.7	4 11.4	2 5.7	35 100.0	3.06
System 2	1 3.1	9 28.1	9 28.1	7 21.9	2 6.3	4 12.5	0 0.0	0 0.0	32 100.0	2.37
System 3	0 0.0	6 12.8	21 44.7	6 12.8	3 6.4	4 8.5	2 4.3	5 10.6	47 100.0	3.08
System 4	0 0.0	3 21.4	4 28.6	4 28.6	3 21.4	0 0.0	0 0.0	4 28.6	14 100.0	2.50
All Systems	1 1.8	24 18.8	45 35.2	26 20.3	9 7.0	10 7.8	6 4.7	7 5.5	128 100.0	2.83

TABLE 2

Weissman SAS Scores on Social and Leisure Items

High Performance Low Performance

Count Row Percentage	1	2	3	4	5	6	7	Totals	Means
System 1	1 2.0	14 27.5	12 23.5	3 5.9	10 19.6	8 15.7	3 5.9	51 100.0	4.08
System 2	7 19.4	13 36.1	7 19.4	2 5.6	6 16.7	1 2.8	0 0.0	36 100.0	2.56
System 3	4 5.7	23 32.9	16 22.9	9 12.9	10 14.3	6 8.6	2 2.9	70 100.0	3.34
System 4	0 0.0	2 9.1	6 27.3	7 31.8	5 22.7	2 9.1	0 0.0	22 100.0	3.95
All Systems	12 6.7	52 29.1	41 22.9	21 11.7	31 17.3	17 9.5	5 2.8	179 100.0	3.47

TABLE 3

Weissman SAS Scores on Overall Social Adjustment

	High Performance					Low Performance			
Count Row Percentage	1	2	3	4	5	6	7	Totals	Means
System 1	1 2.0	11 21.6	11 21.6	12 23.5	5 9.8	7 13.7	4 7.8	51 100.0	3.90
System 2	7 19.4	10 27.8	6 16.7	10 27.8	3 8.3	0 0.0	0 0.0	36 100.0	2.78
System 3	2 2.8	20 28.2	11 15.5	20 28.2	13 18.3	4 5.6	1 1.4	71 100.0	3.53
System 4	0 0.0	2 9.1	6 27.3	4 18.2	6 27.3	3 13.6	1 4.5	22 100.0	4.23
All Systems	10 5.6	43 23.9	34 18.9	46 25.6	27 15.0	14 7.8	6 3.3	180 100.0	3.57

APPENDIX J

Special Features of System 2

The intention to make extremely parsimonious use of psychiatric beds in this system, even more of psychiatric hospitals, has already been indicated. Data on actual bed use for the studied patients, as noted above, show that, although episodes of hospitalization were relatively low, the major difference between this system and the others lay in length of hospitalization. Only two of the System 2 patients showed total bed days beyond 250 and seven patients had never been hospitalized.

Administratively, policy and practice exemplify the principle of non-use or light use of psychiatric beds and psychiatric hospitals. An interregional transfer committee exists to approve applications to hospitalize out of region, maintaining the criterion that no suitable program exists in-region but does exist in the host region. Some transfers are accepted but, since 1976, there have been only a few transfers from System 2 to the single remaining provincial psychiatric hospital, now only a small facility for severely dysfunctional patients. For the most part, such transfers as do take place are an overflow handling arrangement by which approximately 15 patients a year go to a psychiatric annex attached to a general hospital 100 miles away. Long-stay audit committees operate in all the hospitals.

In thus appears that the System 2 claim to treat their patients successfully without recourse to lengthy hospitalization is justified.

To say that these patients functioned well without heavy hospitalization is not of course the same thing as saying that light hospitalization was the major effective factor in the total complex of care. The statistical analysis, while indicating hospitalization as significantly associated with work competence, personal independence, and global scores, showed other, stronger, and more comprehensive associations, for example with contact professional. Other aspects of System 2 require examination.

An unusual aspect of System 2 is the relative consistency with which psychiatric patient care is approached. By agreement among the area psychiatrists, a Continuity of Care Agreement operates, whereby the care of any patient presenting at an emergency or treatment facility is considered to be the responsibility of the psychiatrist who last saw him within the last two years. The patient may refuse the psychiatrist but the psychiatrist cannot refuse the patient without giving reason, both to the patient and to the new treating psychiatrist.

As in most Canadian urban locations, private psychiatric practices (of which there are seven) operate alongside direct provincial services, and, in this location, the provincial services are unusually collaborative with private psychiatrists, who have equal access to the provincial services, for example to request nurses to do follow-up visits.

The Regional Director (a psychiatrist) has responsibilty for provincially funded clinical services in the area, including services in the rural districts, and there is a clearly integrated follow-up process, which includes two Community Psychiatric Nursing Care Programs, one at the Mental Health Clinic and one at the University Department of Psychiatry. There are usually strong ties between the university and the provincial clinical services and the major psychiatric hospitalization facility is a ward of the University Hospital.

The Mental Health Centre, located in a downtown commercial building, is a major facility for the patient groups of this study and its practices thus require special attention. The centre is multidisciplinary and individual workers of any discipline may accept direct referrals or self-referrals. At point of entry the patient, known by non-medical staff as a client, is registered by a worker. At this point a review date is set, which may not be more than six months in the future, and from this point an audit system comes into operation. The audit committee, which includes the (psychiatrist) Director

meets once a month and all current cases are reviewed in the month of their set dates. In addition to the general audit, for patients receiving prescription drugs there is also a regular medical audit at least once every six months. Prescriptions are not renewed if this audit does not take place. If the regular worker of a patient on medication is not a physician, the patient must also be seen by a physician at regular intervals.

We may suppose that this system of regular medical checks and examinations results in the greater probability of major tranquilizer prescription being ajusted to changing patient status and requirement, in contrast to some situations encountered elsewhere where patients were not followed up on a regular basis and/or where patients could continue on the same prescription without physician consideration for extensive periods of time.

In System 2 there is a type of housing service which may also have assisted patients to maintain function in the community. These are "private special care homes," which have to meet and maintain quality criteria and on which there is a central registry to which patients are usually sent to negotiate their own arrangements. The registry and the private homes are not restricted to psychiatric patients, who account for about 2/5 of the "guests" at any time. Much of the accommodation is of the "suite" type where a single room is rented with a plumbing facility, usually a kitchen sink, although some landladies provide food. The fact that clients are not "placed," but make

their own contact with the landlady, is an important feature of the system. A further local feature is that landladies receive courses to assist them in dealing with difficult or distressed tenants, and may have recourse to advice from clinical staff.

For the most part the costs of accommodation are borne by Social Services, the Home Care Board, funded by Social Services, maintaining a comprehensive and apparently successful Home Care Program, including meals-on-wheels and visiting homemakers. There seem to be fewer problems associated with the accommodation services in System 2 than in many other parts of the country, but this is an impressionistic statement. What is factual is the unusual feature of psychiatric patients using the "normal" accommodation services, from boarding homes to private lodging, as opposed to a special system of homes for psychiatric patients, which is the usual arrangement in other locations. The separation of patients into levels of care is by behavioural requirement for care rather than by diagnosis.

Although there is no special vocational program in the jurisdiction of psychiatric services, patients are referred to a long-standing "training on the job" program of Social Services and particular attention is said to be paid to work problems at regular visits or interviews with clinic staff.

Less tangible and more sponstaneously-occurring environmental factors may have played a part. System 2, like System 3, lies in a part of Canada where relatively stable and unsophisticated lifestyles prevail. The rural hinterland, from which in System 2 a substantially larger proportion of patients than in other locations were drawn, is at once conservative in thought and behaviour and cooperatively oriented in political-economic terms. Also, holding as it does major resources of production and population, the rural life of the province exerts an influence on provincial life far beyond the rural influence in provinces with major metropolitan centres.

Alexander Leighton has pointed out that epidemiological data show that, "whatever the cause, the prevalence rates for many, if not all, kinds of mental illnesses are higher in severly disintegrating societies than in those that are socially and culturally integrated." If this is the case, it seems possible that, in societies which are relatively stable and well integrated, the mentally ill would benefit from a less stressful environment. It seems at least possible that the environmental circumstances in System 2 resulted in a stable social context from which the schizophrenic patients benefitted, fitting more comfortably and acceptably into a familiar, undemanding social framework. Certainly, on the anecdotal level, there was considerable evidence in interviews in both Systems 2 and 3 of the patients engaging in pleasurable patterns of social and commercial interaction - meeting each other in the same cafés, playing pool together, country dancing, etc. There was also a greater

sense of social acceptability and fewer complaints of discrimination than in System 1 and 4. No strict measure was taken of such differences between the systems, as these were not anticipated, but the point is made in indicating a complex of factors which logically could have exerted potentiating effects on the systemic factors.

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